



#### SECTION IV - CONSTRUCTION NOTES

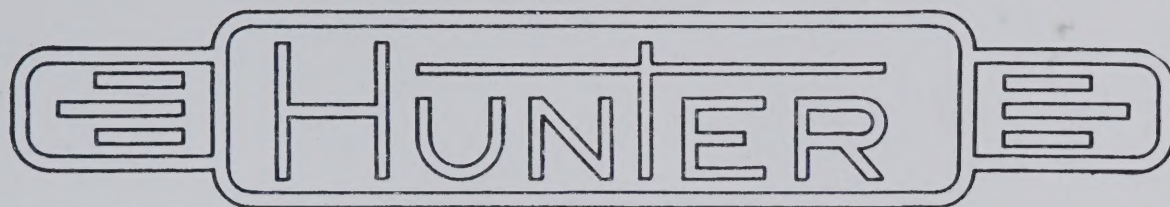
This manual has been prepared to allow you to complete your kit with the least possible chance for error. If followed carefully, the result will be stable, trouble free operation of your Bandit. We suggest that you follow the steps in order and DO NOT skip any step.

Unpack the kit carefully and check the parts against the parts list. This will acquaint you with all the pieces and enable you to determine if there are any shortages. If shortages are found, refer to the replacement section and supply all the necessary information.

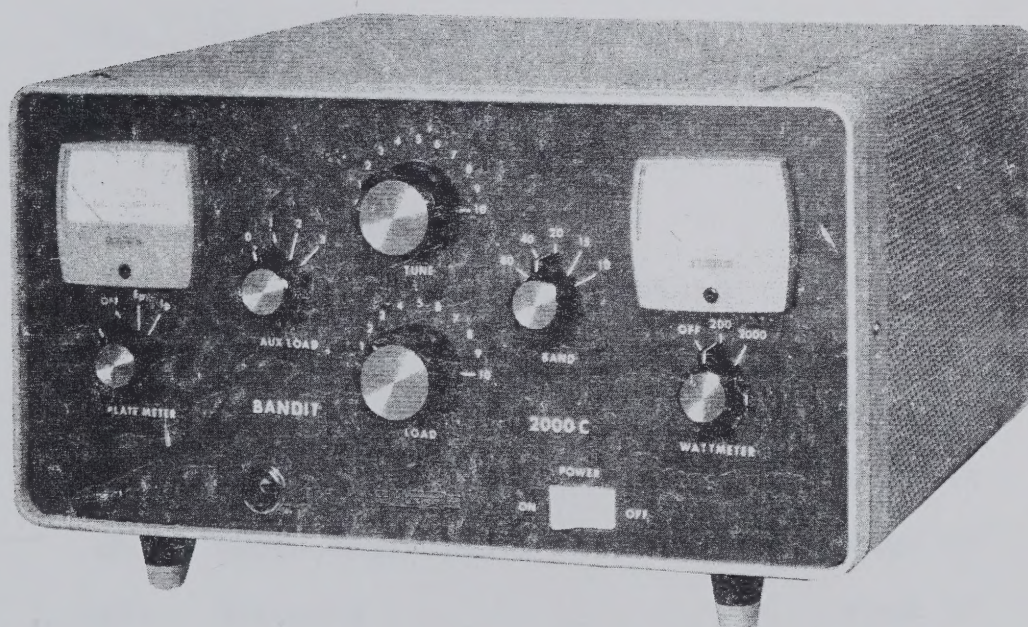
Before starting to work, we suggest you do the following:

1. Lay out all parts so they are available.
2. Equip yourself with a set of good tools. You will need the following as a minimum:
  - A. Slotted screwdriver with a 1/4" blade.
  - B. Adjustable wrench.
  - C. Phillips head screwdriver for No. 4 and No. 6 screws.
  - D. Long nose pliers.
  - E. Diagonal cutting pliers.
  - F. Wire stripping tools (pen knife or wire stripper).
  - G. A solder iron (100 watts recommended).
  - H. Small solder iron for printed circuit work.





# ASSEMBLY AND OPERATING INSTRUCTIONS



**MODEL 2000C**

**BANDIT**

**Linear Amplifier**

**PRICE \$3.00**





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# SPECIFICATIONS

## HUNTER BANDIT

2000C

### LINEAR AMPLIFIER

MAXIMUM POWER INPUT -----	2,000 watt PEP SSB 1,000 watts CW, AM, RTTY
BAND COVERAGE -----	80, 40, 20, 15 and 10 meters
DUTY CYCLE -----	50%
MODULATION -----	SSB, CW, RTTY, AM
3RD ORDER DISTORTION -----	-30 DB
5TH ORDER DISTORTION -----	-50 DB
EXCITATION REQUIRED -----	100 watts
INPUT IMPEDANCE -----	50 to 72 ohms
OUTPUT IMPEDANCE -----	50 to 72 ohms
MAXIMUM VSWR ALLOWED -----	2:1
METERING -----	Plate Volts, Plate Current, Output Watts
POWER SUPPLY -----	Self-contained Solid State
AC POWER REQUIREMENTS -----	115 VAC, 50-60 cps, at 20 amps 230 VAC, 50-60 cps, at 10 amps
SIZE -----	9 1/4" high x 15 7/8" wide x 13 1/4" deep
TUBE COMPLEMENT -----	2 Zero Bias Triodes Amperex 8163 recommended Eimac 8163/3400Z permitted
WEIGHT -----	Approx. 57 pounds
FRONT PANEL CONTROLS -----	Tuning Loading Band Switch Auxiliary Antenna Loading Wattmeter Plate Meter Power ON-OFF
REAR PANEL CONNECTIONS -----	Antenna RF Input Relay Control Ground

## SECTION II - INTRODUCTION

### Band Coverage and Power Output

The Hunter Bandit 2000C is designed to offer the maximum in performance in a desk top single side-band linear amplifier. The 2000C will furnish 2000 watts PEP single side band power input on most frequencies allocated in the amateur bands of 80, 40, 20, 15 and 10 meters. The full 2000 watts PEP can be realized with only 100 watts drive from the exciter. Exciters with higher output power can be used without harming the 2000C.

### Tube Complement

Two zero bias triodes, Amperex 8163 or Eimac 8163/3-400Z are used in parallel for the power amplifier. These tubes feature instant heating, dispensing with a lengthy warm-up period.

### Power Supply

A solid state power supply, capable of furnishing 1 ampere at 2200 volts DC, is self-contained. The circuit is a voltage-doubler type with an equivalent capacity of 23 mfd.

### Output Network

A pi matching network is used to match the output of the 2000C to a coaxial antenna line. Antennas having impedances in the range of 50 to 72 ohms may be matched by using the variable capacitor in the output of the pi network. Three additional capacitors of .0003 microfarad each may be added in parallel to the output capacitor by means of a front panel switch. This allows matching the output network to low impedance antennas on lower frequencies.

### Metering

The plate current or plate voltage of the Bandit can be monitored by a front panel switch. A unique feature of the 2000C is a direct reading wattmeter in the output network. This wattmeter measures the power in the feeder line in 52 ohm coaxial systems. It is accurate to within 20% of the actual power delivered. (If the antenna system is 72 ohms, the reading will have to be adjusted for this.)

### Controls

Front panel controls are TUNING, LOADING, BAND SWITCH, AUX. ANT. LOADING, WATTMETER, PLATE METER, and POWER.



Rear panel connections are ANTENNA, RF INPUT, RELAY CONTROL, and STATION GROUND.

The relay control connection provides a convenient point to control the automatic changeover relays included within the Bandit. The usual key-down contact closure is required to energize the internal changeover relays in the Bandit.

### Connections

The Bandit 2000C is designed for use with a single sideband transceiver. Two connections between the exciter and the 2000C are required. All interconnecting cables are supplied. RG8/U coaxial cable or equivalent MUST be used for the antenna system. (If the antenna system is 72 ohms the line must be 72 ohms.)

### Input Power

The Hunter 2000C may be operated at 115 VAC or 220 VAC single phase. Current requirements are 20 amperes for 115 V connections and 15 amperes for 220 V connections. A changeover board provides easy conversion to the different line voltages.



### SECTION III - CIRCUIT DESCRIPTION

Refer to the Schematic diagram to follow the circuit and identify circuit components while reading this section.

#### RF Section

Two zero bias triodes, Amperex type 8163, in a grounded grid circuit form the power amplifier unit. The RF signal is coupled from the RF Input jack, J-1, via capacitors C-10 and C-11 to the cathode connection. Networks RFC-1 and RFC-2 serve to eliminate parasitic oscillations. The idling current is reduced by means of R-1, a 350 ohm non-inductive resistor. One contact, RE2-1, on the antenna transfer relays shorts this resistor out during transmission.

The plates of the zero bias triodes are coupled to the output pi network by means of the parasitic suppression networks and capacitor C-14. Inductors L-4 and L-3 and capacitor C-16 and C-17 form the output network. Band switching is accomplished by shorting out sections of inductors L-4 and L-3 by the Band switch, S-3. Tuning is accomplished by capacitor C-16. Loading capacitor C-17 operates in conjunction with the auxiliary antenna loading switch, S-4, and capacitor C-18, C-19 and C-20. This circuit will match most antennas on all bands. Bifilar chokes L-1 and L-2 serve to isolate the filament supply from the RF potentials. Capacitor C-12 and C-13 bypass the RF potential to ground at the transformer end of the bifilar choke. Radio frequency choke RFC-3 isolates the B+ supply from the RF output. Capacitor C-15 provides additional bypassing to ground at the lower end of the RF choke.

#### Power Supply

The power supply is a full wave voltage doubler circuit. Diode CR-1 rectifies the alternating input. Filtering is provided by capacitors C-2, 3, 4, 5, 6 and 7. Each capacitor in the series connection is bypassed by a 41 K resistor to equalize the voltage gradient. This results in an equivalent capacity of 23 microfarads. Resistor R-9 in the return leg serves to limit the maximum current that can be drawn from the power supply. The plate voltage and the plate current are indicated on meter ME-1. High voltage dropping resistor R-10 is returned to the mid point of the voltage doubling circuit. This resistor is a 1.5 megohm precision high voltage resistor. The plate current is monitored by a 0.1 ohm shunt, R-8, in the ground return path of the power supply. A three position switch, S-2, serves to switch the meter to the circuit desired. An OFF position is also included to disconnect the meter from the measuring circuits.



## Output Power Monitor

Forward power to the antenna is indicated by the wattmeter, ME-2. During transmission this wattmeter acts as a continuous monitor of transmitter performance and antenna match. The circuit is essentially a reflectometer and a DC volt meter. The reflectometer delivers DC voltages which are proportional to the forward power in the transmission line. The DC volt meter indicates the magnitude of the voltages produced by the forward power and displays it on the meter. This circuit consists of toroidal transformer T-2, capacitors C-21, C-22, C-23, resistors R-11, R-12, R-13 and R-14, diode CR-2, meter ME-2 and switch S-5.

Transmission line current flows through the line and the center of the toroid. The conductor forms the primary section and the coil the secondary section of the toroidal transformer. Antenna current induces a voltage that appears across resistor R-11. Antenna voltage is applied across the capacitor divider C-21 and C-22. This voltage is in phase with the voltage produced by the induced antenna current. Diode CR-2 rectifies the voltages and produces a DC voltage that is proportional to the antenna current and voltage. Meter ME-2 acts as a multiplying element and indicates transmitted power. Switch S-5 changes the range of the meter, measuring the exciter power or the power output of the Bandit. This circuit will indicate the forward power to a 52 ohm impedance with an accuracy of  $\pm 20\%$ .

## Antenna Changeover

Automatic antenna changeover is provided by relays RE-1 and RE-2. Relay 1 disconnects the receiver from the antenna during transmission. The antenna is routed to the receiver by this relay when the 2000C is de-energized or during periods of key-up operation. Relay 2 shorts out idling resistor R-1, when the Bandit is keyed.





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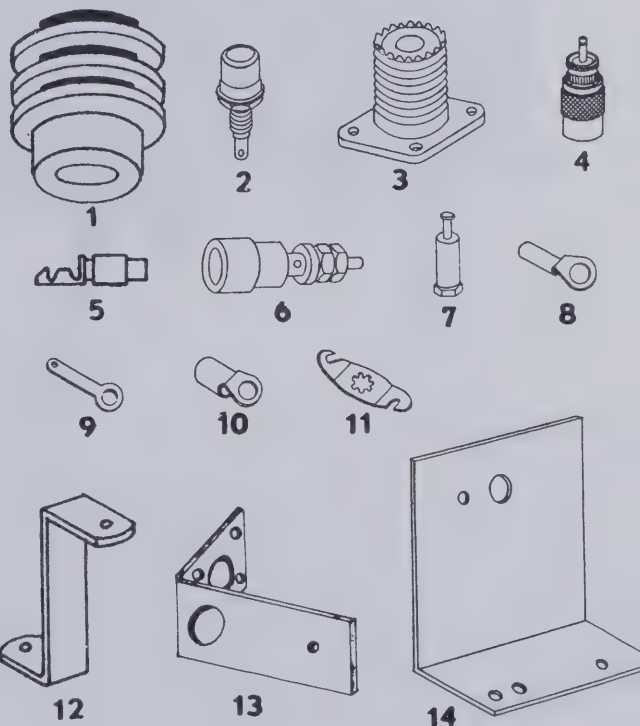
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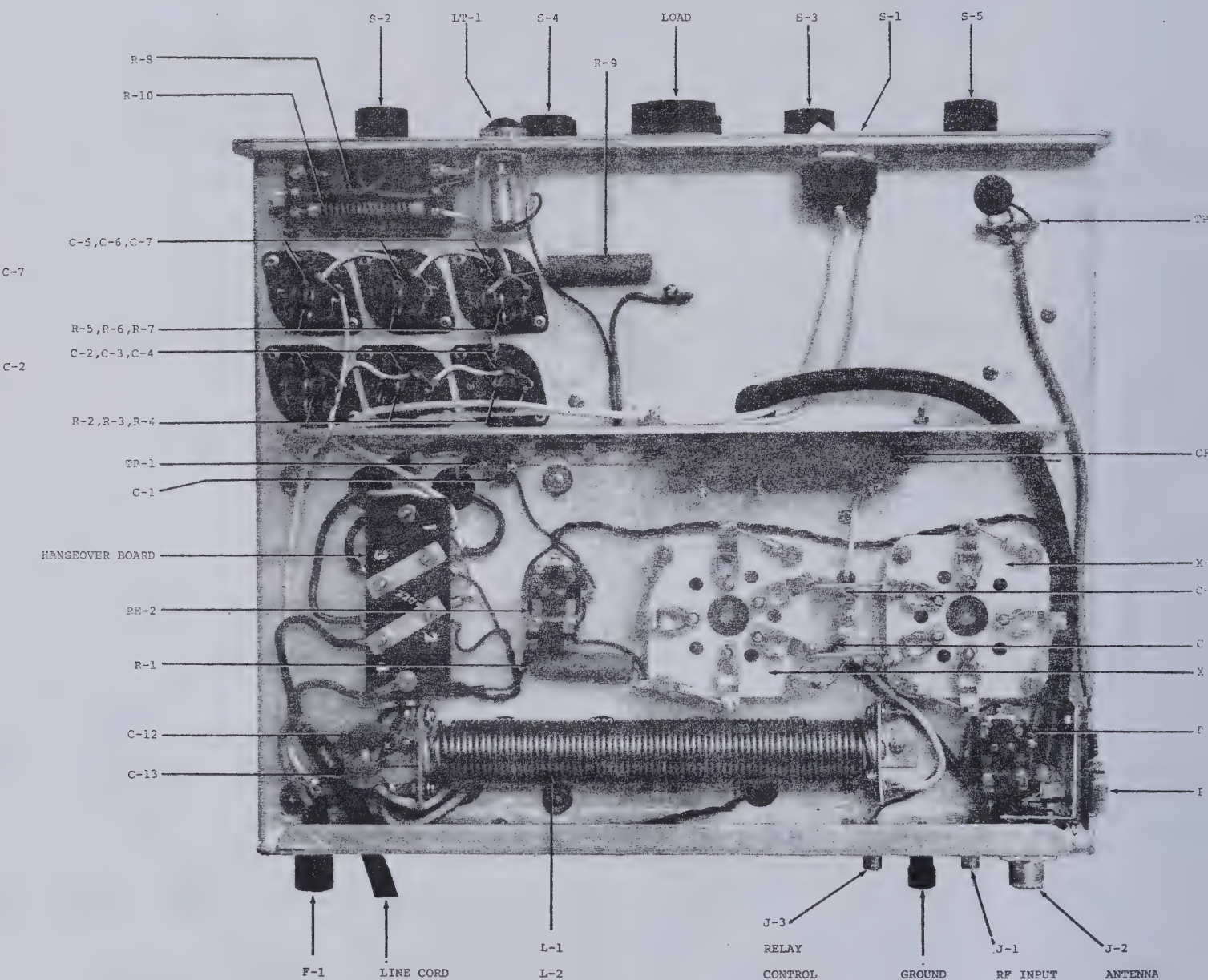
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  - C. Phillips head screwdriver for No. 4 and No. 6 screws.
  - D. Long nose pliers.
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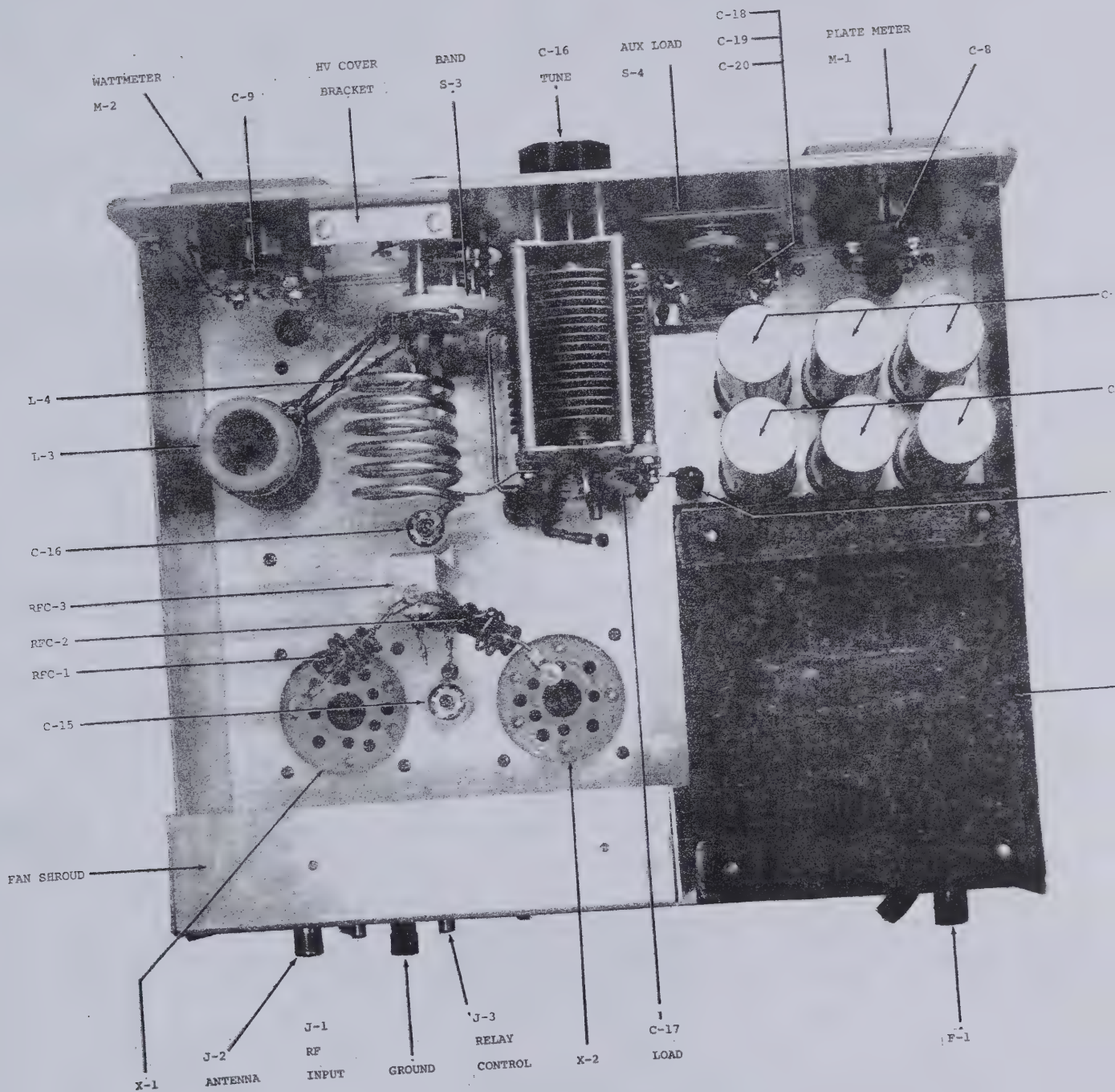
PART NUMBER	DESCRIPTION	QUANTITY	PART NUMBER	DESCRIPTION	QUANTITY
(1) 10-518-5	Plate Cap	2	19-516-0	Fan, Rotron Skipper SKP4	1
10-519-1	Printed Circuit Board, Wattmeter	1	20-009-8	Bulb, GE, Type 1815	1
12-501-4	Capacitor, .001 mf, 1 KV, Ceramic Disk	1	20-025-4	Lampholder, Drake, #62-110	1
12-504-2	Capacitor, .01 mf, 1 KV, Ceramic Disk	8	21-024-1	Relay, Line, MKO2A, 6 VAC, DPDT	2
12-547-0	Capacitor, 140 mf, 475 VDC, Electrolytic	6	22-001-6	Resistor, 10 Ohm, 1/2 w, 10%	1
(46) 12-548-6	Capacitor, .0003 mf, 2500 VDC, Mica, Sangamo HT	3	22-009-4	Resistor, 1.2 K Ohm, 1/2 w, 10%	1
(47) 12-550-3	Capacitor, 1000 mmf, 5KV, Aerovox, Hi-Q, AC-2	2	22-110-9	Resistor, 82 K Ohm, 2 w, 10%	12
12-553-1	Capacitor, Variable 15-353 mmf, Johnson, 154-2-9	1	22-147-6	Resistor, 350 Ohm, 10 w, Nit Sprague #456E3515	1
12-554-7	Capacitor, Variable 30-700 mmf, Johnson, 154-40A	1	22-148-2	Resistor, 5 Ohm, 10 w, Nit Sprague #456E5R05	1
12-560-8	Capacitor, 8 mf, 6 VDC, Electrolytic, Sprague TE1086	1	22-169-8	Resistor, 1.5 Megohm, 2 w, IRC #MVX-2	1
12-565-8	Capacitor, 1mmf, 500 VDC, Tubular, ± .25 pf.	1	22-020-0	Resistor, 6.8 K Ohm, 1/2 w, 10%	1
12-562-0	Capacitor, 500 mmf, 1 KV-DC, Ceramic Disk, 5%	1	22-175-9	Resistor, 270 Ohm, 1/2 w, 10%	1
13-569-5	Terminal Strip, 2 Point	1	(34) 23-504-7	Diode, IN82	1
13-502-3	Terminal Strip, 3 Point	1	(35) 23-517-0	Diode, Full Wave Doubler, PCI #1196	1
(2) 13-532-8	Connector, Phono Jack, Steatite, Switchcraft #3501FP	2	(36) 24-512-3	Fuse Holder, Littelfuse #342014	1
(3) 13-573-4	Connector, SO-239	1	24-528-4	Fuse, 15A, Ceramic, 230/115	1
13-575-6	Connector, Line Cord, Circle F #250	1	24-529-0	Fuse, 20A, Ceramic, 230/115	1
(4) 13-581-7	Connector, PL-259	1	(37) 24-534-5	Switch Band, Radio Switch #65 Special	1
(5) 13-582-3	Connector, Phono, Plug, Switchcraft #3508-2	4	(38) 24-538-9	Switch, Power, Carling #TIGK50-IL-WHXFSM-2	1
(6) 13-550-6	Binding Post, Black, H.H. Smith #220-103	1	(39) 24-548-4	Switch, 2P3P, CTS #222-20681-1	1
(7) 13-535-6	Solder Post, EMC 2427	1	(40) 24-549-0	Switch, 1P3P, CTS #222-20678-1	1
(8) 13-551-2	Solder Lug No. 10, Flat, Meter	8	(41) 24-550-1	Switch, 1P4P, Shorting, CTS #222-20679-1	1
(9) 13-556-2	Solder Lug, #6 Hole - 18-20 Wire, Flat	15	(42) 25-526-5	Choke, RF Antran #AN-618A	1
(10) 13-559-0	Solder Lug, #6 Hole - 12-10 Wire	11	(43) 25-527-1	Choke, RF National #R-100-W, 2.5 mh	1
(11) 13-583-9	Solder Lug, #6 Hole - 18-20 Wire, 'V' Lug	1	(44) 25-535-4	Choke, Bifilar	1
13-537-8	Cable Clamp, 1/4"	1	(45) 25-534-8	Toroid, Torotrel #14522	1
13-539-0	Cable Clamp, 3/8"	1	25-536-0	Transformer	1
14-513-7	Name Plate	1	26-524-6	Tube Socket, Johnson Type 122-275-1	2
14-519-3	Knob, Kurch-Katz, #S-1751-3L-BB	4	26-531-3	Tube, Amperex 8163	2
14-520-4	Knob, Kurch-Katz, #S-1749-3L	2	27-508-3	Wire, #20, High Voltage - Red	48"
16-087-2	Change Over Board	1	27-509-9	Wire, #12, Hook-up, Stranded - White	60"
16-103-2	Change Over Board Link	2	27-511-6	Wire, #12, Bare, Tinned	24"
(12) 16-088-8	Capacitor Mounting Bracket	1	27-521-1	Wire, #20, Bare, Tinned	24"
(13) 16-089-4	Toroid Cover	1	27-527-7	Wire, 2C/Twisted Shielded, Belden 8451	12"
(14) 16-090-5	Auxiliary Loading Switch Bracket	1	27-543-3	Wire, #20, Hook-up - Black	72"
(15) 16-091-1	Main Chassis	1	27-543-3	Wire, #20, Hook-up - Brown	72"
(16) 16-092-7	Backup Panel	1	27-544-9	Wire, #10, Bare, Tinned	6"
(17) 16-093-3	Front Panel	1	27-515-0	Cable, RG-58 A/U	6 1/2'
(18) 16-094-9	Fan Shroud	1	27-540-5	Cable, RG-213/U	15"
(19) 16-095-5	Rear Chassis Support	1	27-541-1	Cable, #14, 3-wire, Type JJ	6'
(20) 16-096-1	Reinforcing Bar	1	32-043-0	Instruction Manual	1
(48) 16-142-6	Bifilar Choke Spacer	2	50-314-1	50-50 Rosin Core Solder	10'
(21) 16-097-7	High Voltage Cover	1			
(22) 16-098-3	High Voltage Cover Bracket	1			
(23) 16-099-9	Case Mounting Block	1			
16-100-4	Case	1			
(24) 16-104-8	Suppressor	2			
(25) 16-105-4	Inductor, 80-40-20 Meters	1			
(26) 16-106-0	Inductor, 15-10 Meters	1			
(27) 16-108-2	Meter Shunt Resistor, 0.1 Ohm, 5W, Current Shunt	1			
(28) 16-107-6	Terminal Board	1			
(29) 16-116-5	P. C. Insulator Board	1			
17-009-7	Screw, 6-32 x 3/4, PH, Phil	2			
17-011-4	Screw, 6-32 x 1/2, PH, Phil	4			
17-012-0	Screw, 6-32 x 3/8, PH, Phil	19			
17-014-2	Screw, 6-32 x 1/4, PH, Phil	12			
17-028-1	Screw, 4-40 x 1/4, PH, Phil	1			
17-161-3	Screw, 4-40 x 1/2, PH, Phil	5			
17-017-0	Screw, 6-32 x 5/16, PH, Phil	2			
17-175-2	Screw, 6-32 x 3/8, FH, Phil	16			
17-180-7	Screw, 6-32 x 1, RH, Phil	12			
17-182-9	Screw, 6-32 x 1, FH, Phil	8			
17-227-3	Screw, 4-40 x 1 1/4, PH, Phil	4			
17-209-5	Screw, 6-32 x 1 1/4, PH, Phil	2			
17-197-4	Screw, 10-32 x 1/2, PH, Phil	1			
17-036-4	Spacer, 3/8 x 1/4 Hexagonal, 6-32 Threaded	4			
17-224-5	Spacer, 1/4 x 1/4 Hexagonal, 6-32 Threaded	4			
17-225-1	Spacer, 1/2 x 3/16 O.D., Tubular, Steel	4			
17-278-4	Spacer, 3/4 x 3/16 O.D., Tubular, Steel	6			
17-032-0	Lockwasher, Internal #4	12			
17-033-6	Lockwasher, Internal #6	78			
17-022-5	Washer, 1/4 ID x 1/2 OD	4			
17-064-7	Washer, Flat, #6 x 5/16 OD	3			
17-066-9	Washer, Flat, #10 x 1/2 OD	1			
17-223-9	Flat Fibre Washer, No. 6	17			
17-007-5	Nut, 6-32 x 1/4	34			
17-008-1	Nut, 6-32 x 5/16	28			
17-018-6	Nut, 4-40 x 1/4	20			
17-270-6	Nut, 3/8-32, Switch Nut	3			
17-274-0	Acorn Nut, 6-32	4			
(31) 17-362-7	Tinnerman Nut	2			
17-040-3	Stud, 6-32 x 1	1			
17-047-5	Stud, 6-32 x 5/8	1			
(32) 17-213-4	Mounting Foot Extension Leg, Budwig L6B	2			
(33) 17-214-0	Mounting Foot, Budwig F6G	4			
18-024-0	Meter, Plate Volts, Plate Current	1			
18-027-8	Meter, Wattmeter	1			
19-012-6	Grommet, 1/4	5			
19-015-4	Grommet, 1/2	3			
19-016-0	Grommet, 9/16	3			
19-003-7	Standoff, Ceramic, 3/4 x 3/8 O.D.	1			
19-025-9	No. 20 Sleeving, Alpha PVC-105-20	2"			





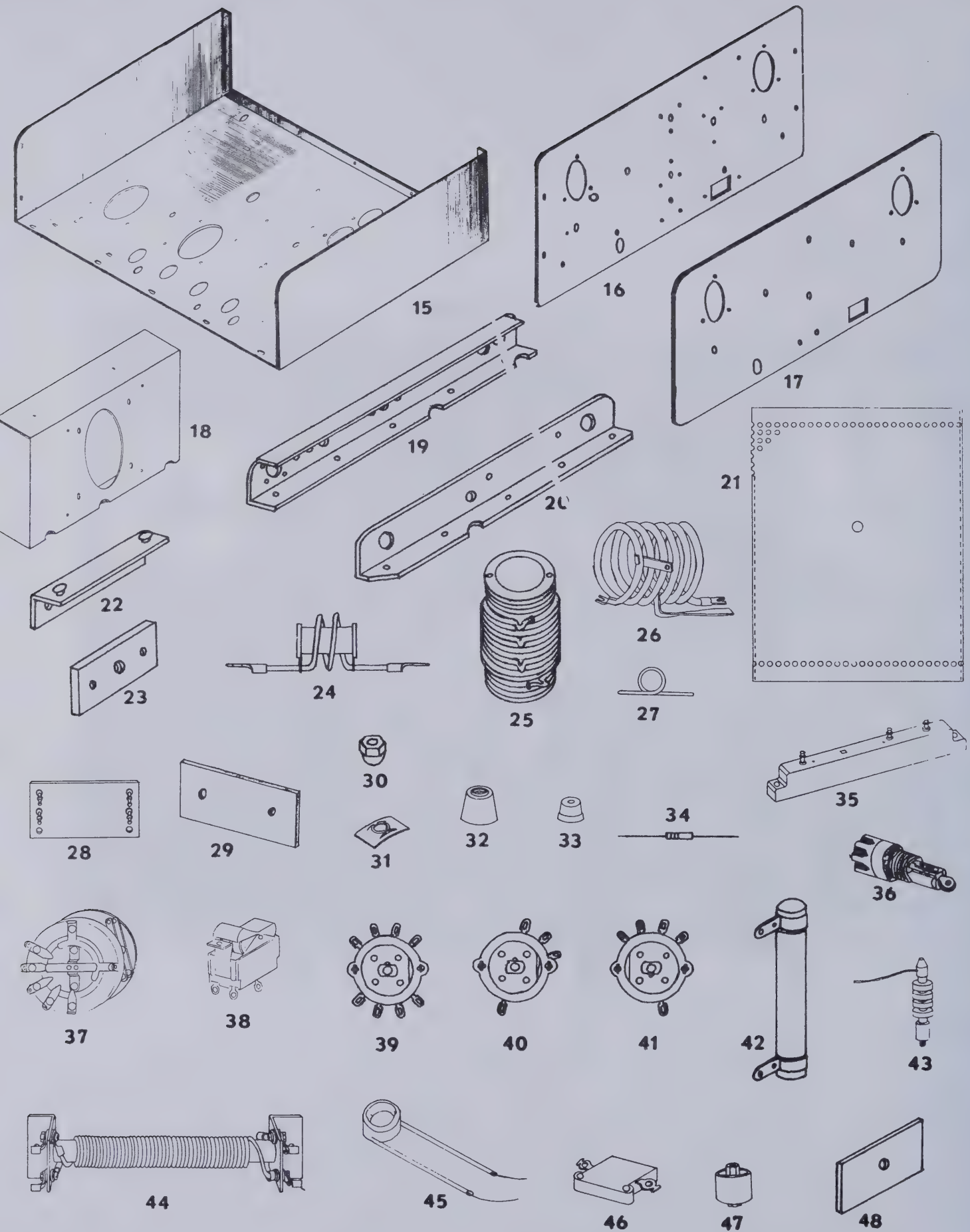
BOTTOM VIEW





TOP VIEW

(HIGH VOLTAGE COVER AND TUBES REMOVED)





## SECTION VI - STEP-BY-STEP PROCEDURE

The following assembly instructions are presented in a logical sequence to enable you to assemble your kit in the shortest possible time with the minimum amount of error and confusion. Be sure to read the entire step through before starting to have the operation firmly in mind. It helps to read ahead several steps to become familiar with the sequence of operation. As you finish each step, check it off in the space provided. It will help to eliminate errors. Refer to the pictorial diagrams and try to place the components as closely as possible to the layout shown. KEEP YOUR LEADS AS SHORT AS POSSIBLE AND MAINTAIN GOOD CONSTRUCTION PRACTICES.

In all cases where fastening hardware is described a lockwasher shall be used. The lockwasher is placed beneath the head of the screw if a screw is specified and beneath the nut when both screws and nuts are specified. Solder lugs go next to the chassis or to the part where specified.

REFER TO PICTORIAL 1 FOR THE FOLLOWING STEPS

\_\_\_\_ Locate the following components:

- ( ) The rear chassis support bar, Part No. 19 on the Parts Pictorial.
- ( ) The fuseholder and fuseholder nut, Part No. 36 on the Parts Pictorial.
- ( ) The SO-239 connector, Part No. 3 on the Parts Pictorial.
- ( ) Two phono jacks, Part No. 2 on the Parts Pictorial.
- ( ) The ground binding post, Part No. 6 on the Parts Pictorial.
- ( ) The case mounting block, Part No. 23 on the Parts Pictorial.
- ( ) One 1/2" grommet.

\_\_\_\_ Refer to Pictorial 1 and mount the fuseholder in Hole A of the rear chassis support. Orient the terminals as shown in Pictorial 1. Secure with the fuse hardware provided.

\_\_\_\_ Mount the 1/2" grommet in Hole B.

\_\_\_\_ Mount the case mounting block at Hole C. Use 6-32 x 5/16" flat-head screws.

\_\_\_\_ Mount one phono jack in Hole D. Secure with the hardware provided with the jack.

\_\_\_\_ Mount the grounding post at Hole E. Secure with the double nut provided with the grounding post.

## SECTION V - SOLDERING INSTRUCTIONS

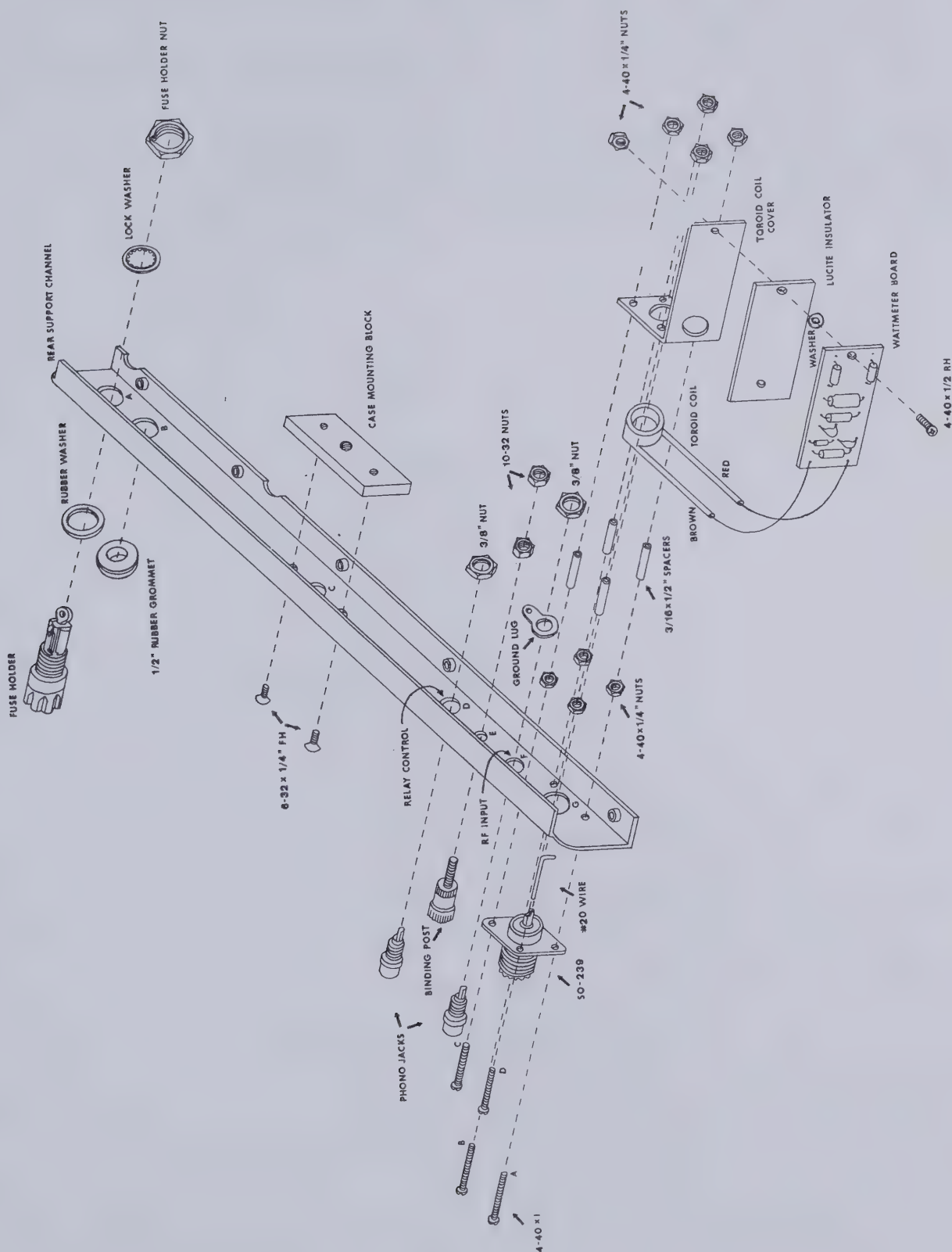
It is the experience of manufacturers that a large percentage of the troubles develop from improperly soldered connections. This is doubly important when working with RF potentials. If you are a beginner, it will pay to practice for a half-hour before beginning.

Tin your iron properly before beginning in the following manner:

1. File all old residue off the iron down to bright copper.
2. Plug the iron in and allow it to heat until solder just flows. Allow solder to flow on the tip.
3. Wipe the excess solder off. This will leave the tip with a shiny surface.
4. Position the work such that gravity will help the flow of solder.
5. Place the iron against the work to be soldered and heat the work.
6. Place the solder against the opposite side of the work. Allow the iron to remain on work until the solder flows. Remove the solder first, then the iron. DO NOT MOVE THE WORK AS THE JOINT COOLS. IF MOVED, A COLD SOLDER JOINT WILL RESULT.
7. The above procedure will result in a good solder joint. The finished appearance of a proper solder joint is smooth and shiny. A dull, crystalline or grainy finish indicates that a cold joint has been made. Reheat the joint until the solder flows again.
8. Wipe the tip of the iron occasionally with a soft cloth to keep it bright and shiny.

USE ONLY ROSIN-CORE SOLDER, OF THE TYPE SUPPLIED WITH THIS KIT. DO NOT USE ACID CORE OR PASTE FLUXES. ALL GUARANTEES ARE VOIDED IN CASES WHERE ACID CORE SOLDERS HAVE BEEN USED. IF ADDITIONAL SOLDER IS NECESSARY, USE 60-40 OR 50-50 ROSIN CORE SOLDER.

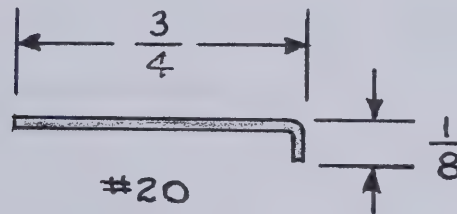




PICTORIAL 1



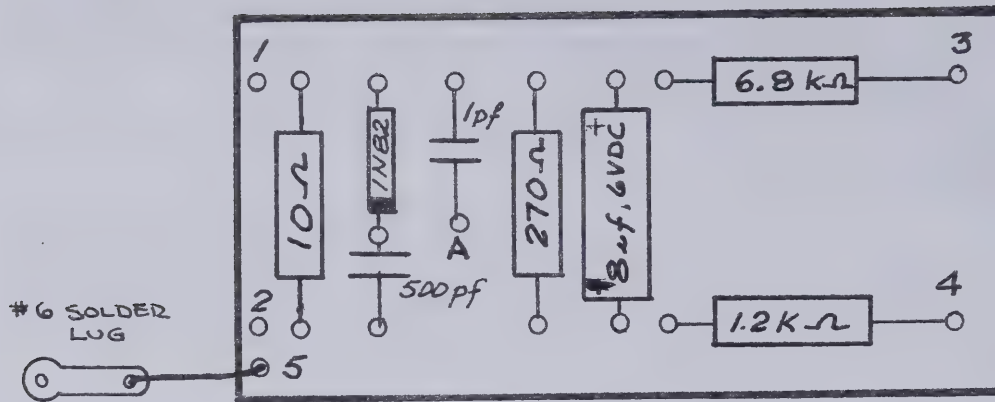
- Mount the remaining phono jack in Hole F as shown on Pictorial 1. Mount the grounding lug next to the rear chassis support bar and fasten with the hardware provided. Orient the grounding lug as shown in Pictorial 1.
- Refer to Detail 1 and cut a  $7/8$ " piece of No. 20 bus wire. Form as shown in Detail 1.
- Solder this into the center contact of the SO-239 connector. Orient as shown in Pictorial 1. Mount the SO-239 connector to the rear chassis support bar. Use 4-40 x 1" screws. Secure with 4-40 x  $1/4$  nuts. Slip a  $1/2$ " piece of #20 sleeving over the wire.



DETAIL 1

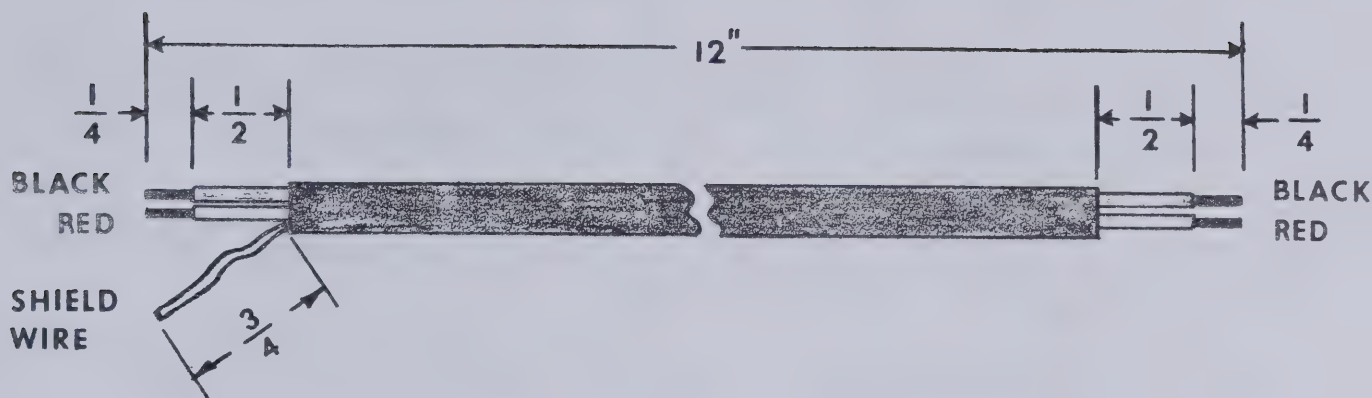
- Locate the following parts:
  - ( ) The printed circuit board, PC-1.
  - ( ) A 10 ohm  $1/2$  watt resistor (brown, black, black).
  - ( ) A 270 ohm  $1/2$  watt resistor (brown, violet, brown).
  - ( ) A 6.8K ohm resistor (green, grey, red).
  - ( ) A 1.2K ohm resistor (brown, red, red).
  - ( ) The 1N82 diode, Part No. 34 on the Parts Pictorial.
  - ( ) The 8 microfarad 6 volt DC capacitor.
  - ( ) A 1 pico farad capacitor, Part No. 48 on the Parts Pictorial.
  - ( ) A 500 pico farad capacitor, Part No. 49 on the Parts Pictorial.
  - ( ) The toroid coil T-2, Part No. 45 on the Parts Pictorial.
  - ( ) #6 solder lug, Part No. 9 on the Parts Pictorial.
  - ( ) 4 -  $1/2$ " x  $3/16$ " od spacers.





- Mount the components on the printed circuit board according to Detail 2. Observe polarities. Solder. Use a small (40 watt) iron when soldering components to the printed circuit board.
- Trim the leads as close as possible to the printed circuit board. DO NOT CUT THE LEAD OF THE 1 PICO-FARAD CAPACITOR AT POINT A. This will be used to connect the wattmeter to the antenna.
- Cut a piece of #20 bare tinned wire 1 1/2" long.
- Solder a #6 solder lug to one end of the wire. Insert the other end into Point 5 of the printed circuit board. Solder.
- Cut a piece of vinyl sleeving 1/2" long. Slip over the lead coming from Point A. Push the sleeving as close as possible to the printed circuit board. Lay the printed circuit board aside.
- Slip the (4) 1/2" x 3/16" od spacers over the 4-40 x 1" screws holding the SO-239 connector.
- Mount the toroid between the spacers. Place the leads next to the rear chassis support bar as shown in Pictorial 1.
- Mount the toroid cover on the spacers. Fasten with 4-40 x 1/4" nuts at screws B, C and D.
- Locate the 12" piece of conductor shielded wire. Refer to Detail 3 and trim the ends as follows:
  - ( ) Strip back the shield 3/4" from both ends.
  - ( ) Carefully fan out the aluminum shield and trim even with the outer jacket.
  - ( ) Cut off the shield wire from one end.
  - ( ) Trim both ends of the two conductors back 1/4" and tin.

DETAIL 3



Using the end with the shield wire removed, insert the red conductor into terminal 3 of the printed circuit board and insert the black conductor into terminal 4 of the circuit board. Solder both connections.

Connect the brown lead of the toroid to Point 1 of the printed circuit board. Solder. Connect the red lead of the toroid to Point 2 of the printed circuit board. Solder.

Mount the printed circuit board to the toroid cover. Place the lucite insulator between the printed circuit board and the toroid cover. Place a fiber washer between the insulator and the printed circuit board. Secure with a 4-40 x 1/2" screw. Fasten with a 4-40 x 1/4" nut.

Connect the lead from Point A of the printed circuit board to the lead soldered to the center contact of the SO-239 connector. Solder. Fasten the #6 solder lug at screw A of the SO-239 connector. Fasten with a 4-40 x 1/4 nut.

REFER TO PICTORIAL 2 FOR THE FOLLOWING STEPS

Locate the following components:

- ( ) The front back-up panel. Part No. 16 on the Parts Pictorial.
- ( ) The main chassis. Part No. 15 on the Parts Pictorial.
- ( ) The reinforcing bar. Part No. 20 on the Parts Pictorial.
- ( ) A 2 point tie strip (Referred to hereafter as TP1).
- ( ) A 3 point tie strip (Referred to hereafter as TP2).

Mount the front back-up panel to the main chassis using 6-32 x 3/8" flathead screws. Fasten with 6-32 x 1/4" nuts. Use lock washers beneath the nuts.

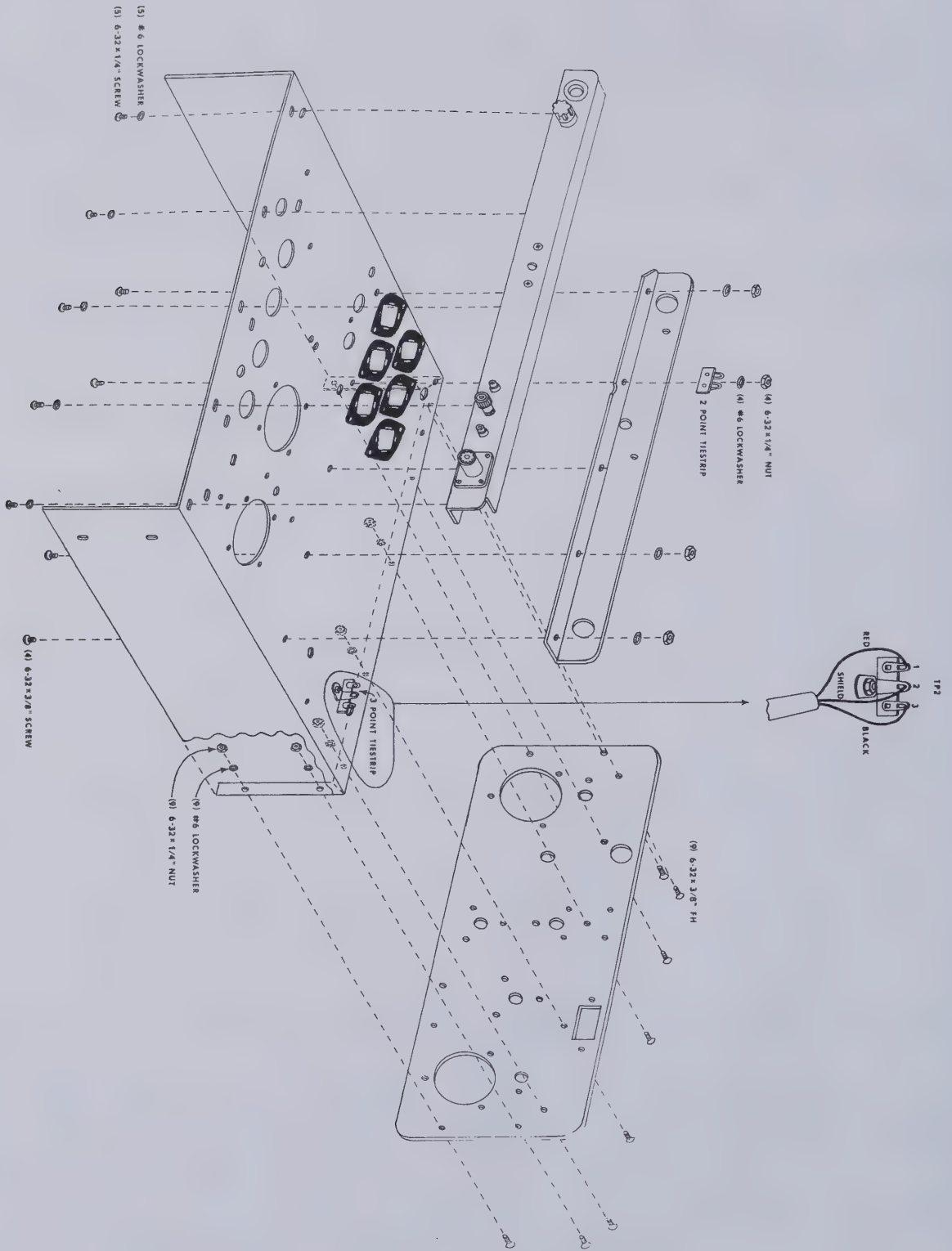
- Mount the 3 point tie strip at hole X. Use a 6-32 x 1/4" screw. Fasten with a 6-32 x 1/4" nut. Use a lockwasher beneath the nut.
- Mount the reinforcing bar at holes A-1, A-2, A-4, and A-5. Use 6-32 x 3/8" screws. Fasten with a 6-32 x 1/4" nut. Use lockwashers beneath the nuts. Mount the 2 point tie strip beneath the nut at hole A-2.
- Mount the rear chassis support on the main chassis at holes R-1, R-2, R-3, R-4 and R-5. Use 6-32 x 3/8" screws. Use lock washers beneath the screw heads.
- Connect the black wire from the shielded cable to TP2-3. Solder. Connect the shield wire to TP2-2. Solder. Connect the red wire to TP2-1. Solder.

REFER TO PICTORIAL 3 FOR THE FOLLOWING STEPS

- Locate the following parts:
  - ( ) Three 9/16" grommets.
  - ( ) Two 1/2" grommets.
  - ( ) Eight 1/4" x 1/4" hex spacers.
  - ( ) Four 3/8" x 1/4" hex spacers.
  - ( ) A 1/4" grommet.
  - ( ) A solder post, Part No. 7 on the Parts Pictorial.
- Mount a 1/2" grommet at hole G-1 and G-2.
- Mount a 9/16" grommet at hole G-3, G-4 and G-5.
- Mount a 1/4" grommet at hole R.
- Mount the solder post at hole U on the chassis. Use a 4-40 x 1/4" screw. Use a lockwasher beneath the head of the screw.
- Mount one 3/8 x 1/4" hexagonal spacer at hole V on the main chassis. Use a 6-32 x 1" screw. Thread the spacer unto the screw and tighten securely. Use a lockwasher between the chassis and the spacer. See Inset 1 on Pictorial 3.
- Mount another 3/8" hexagonal spacer in the same manner at hole W on the main chassis. Use a 6-32 x 1" screw.

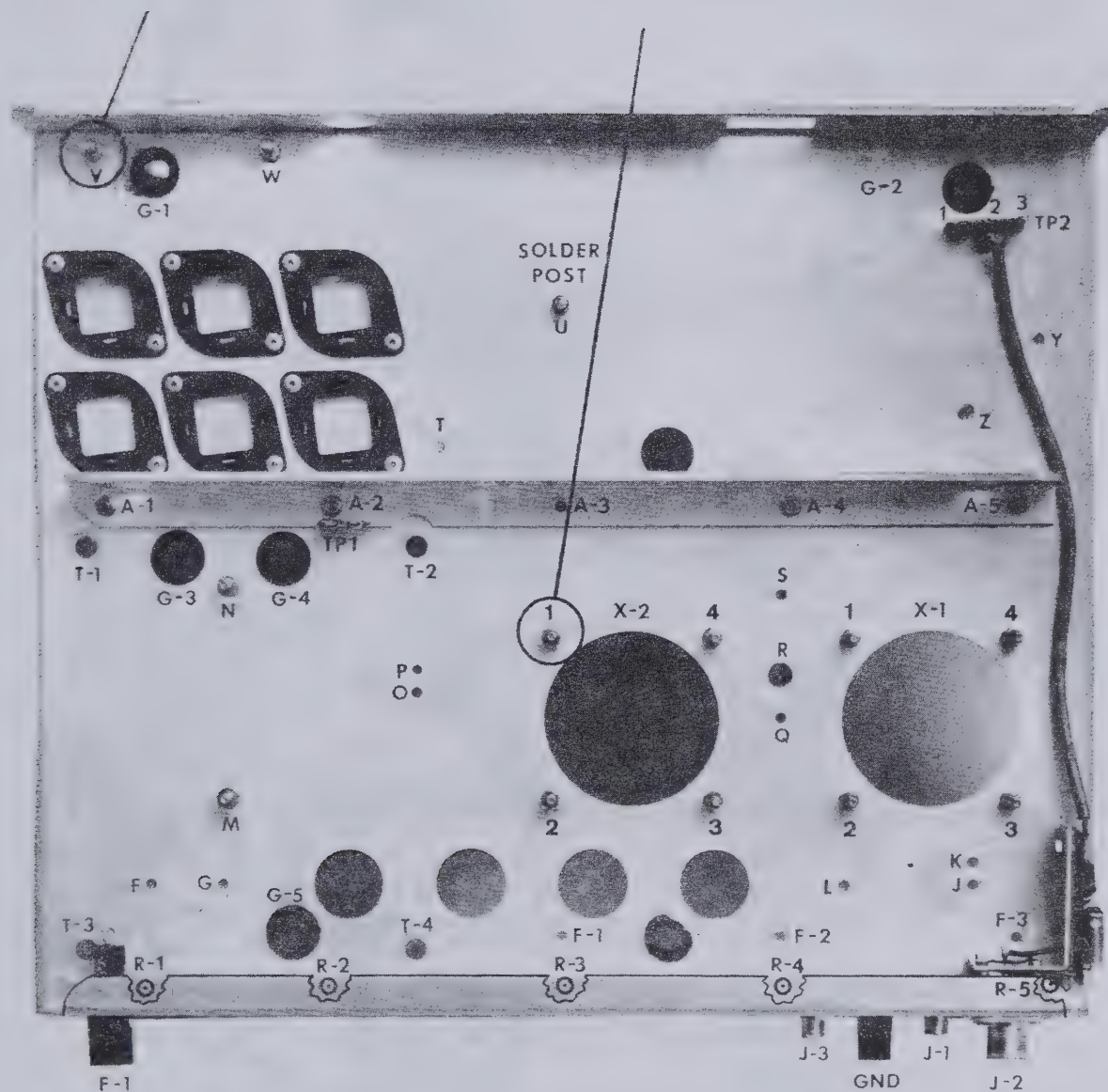
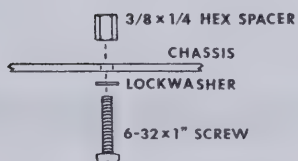
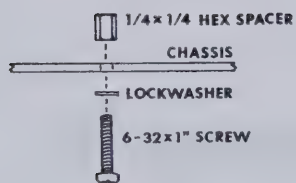






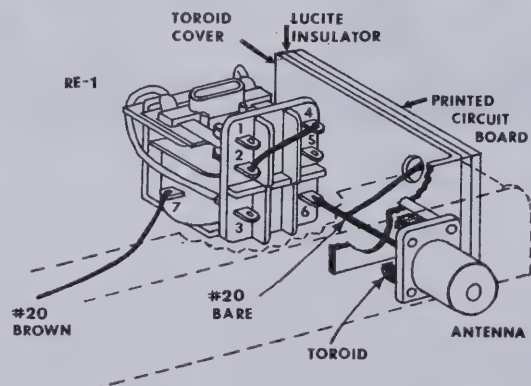
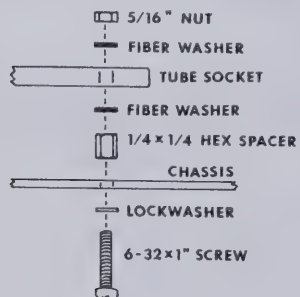
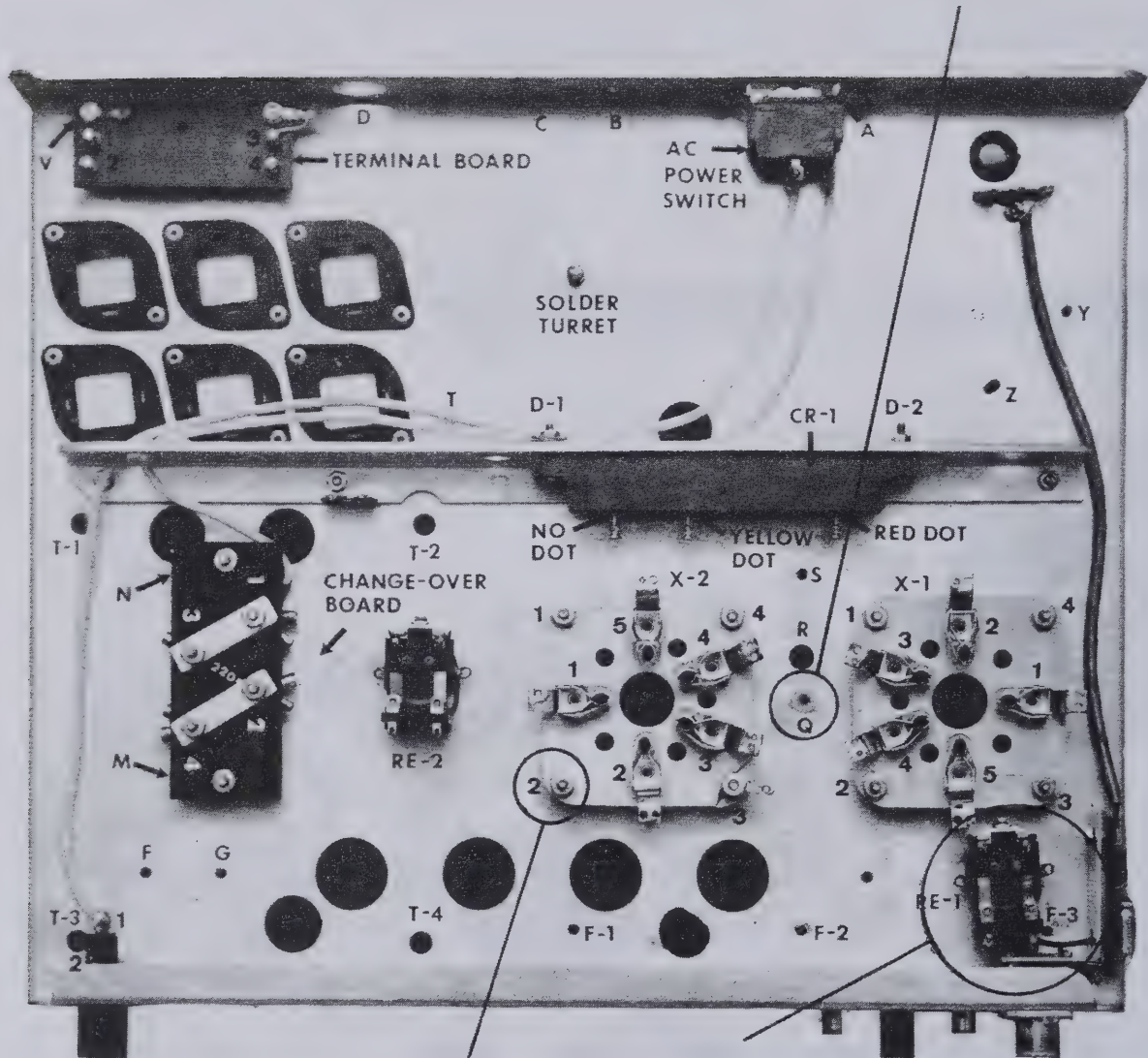
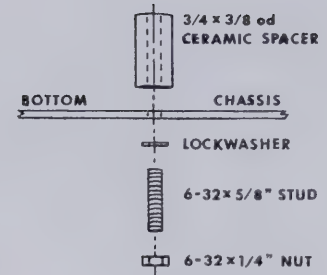
PICTORIAL 2

## PICTORIAL 3





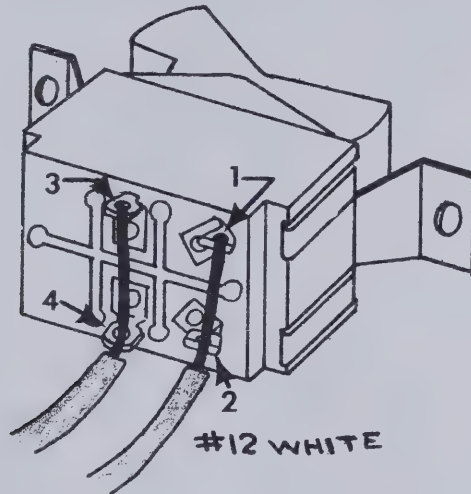
## PICTORIAL 4



- Strip back the insulation on one end of both pieces 11/16" and tin. Strip back the insulation on the other end of both pieces 1/4" and tin.

REFER TO DETAIL 4 FOR THE FOLLOWING TWO STEPS

- Insert the 11/16" end of the 20 5/8" piece of No. 12 white wire into terminals 1 and 2 of the AC power switch. Solder both connections.
- Insert the 11/16" tinned end of the 18" piece of No. 12 white wire into terminals 3 and 4 of the AC power switch. Solder both connections.



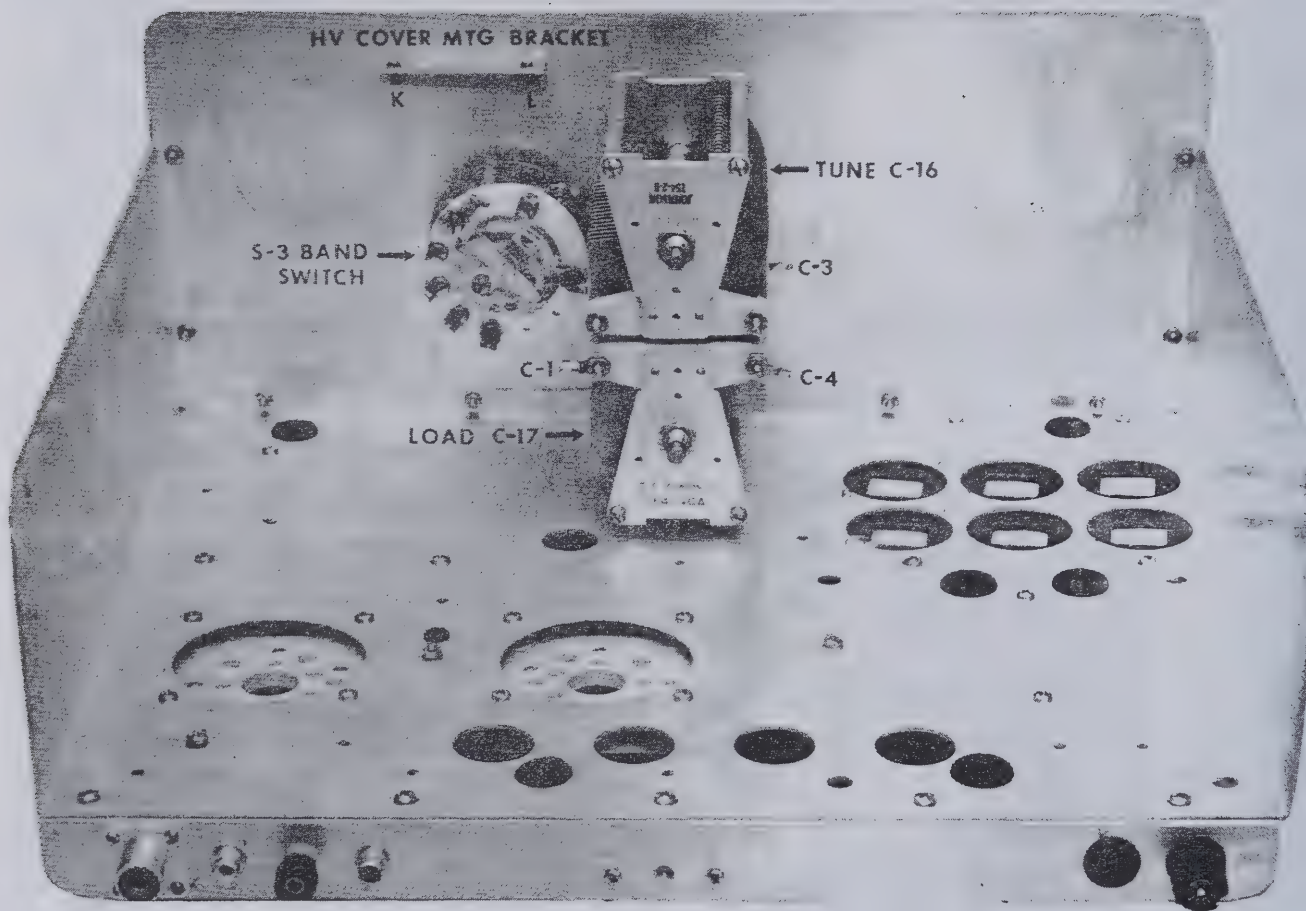
DETAIL 4

- Install the AC power switch as shown in Pictorial 4 at hole A on the front back-up panel. Use 6-32 x 3/8" flathead screws. Fasten with 6-32 x 1/4" nuts. Use lockwashers beneath the nuts.
- Route the No. 12 wires as shown in Pictorial 4. Go through the cable clamp mounted at hole D-1 on the reinforcing bar.
- Connect the end of the 18" cable to terminal 1 of the change-over board as shown in Pictorial 4. Solder. Connect the end of the 20 5/8" piece to terminal 1 of the fuseholder as shown in Pictorial 4. Solder.

REFER TO PICTORIAL 5 FOR THE FOLLOWING STEPS

- Locate the following components:
  - ( ) The high voltage cover mounting bracket, Part No. 22 on the Parts Pictorial.

## PICTORIAL 5





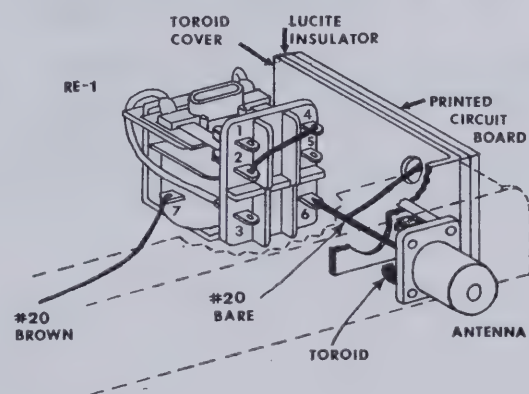
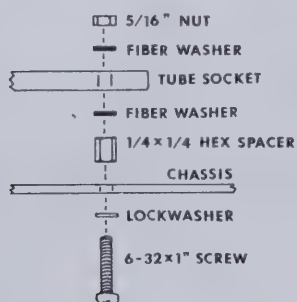
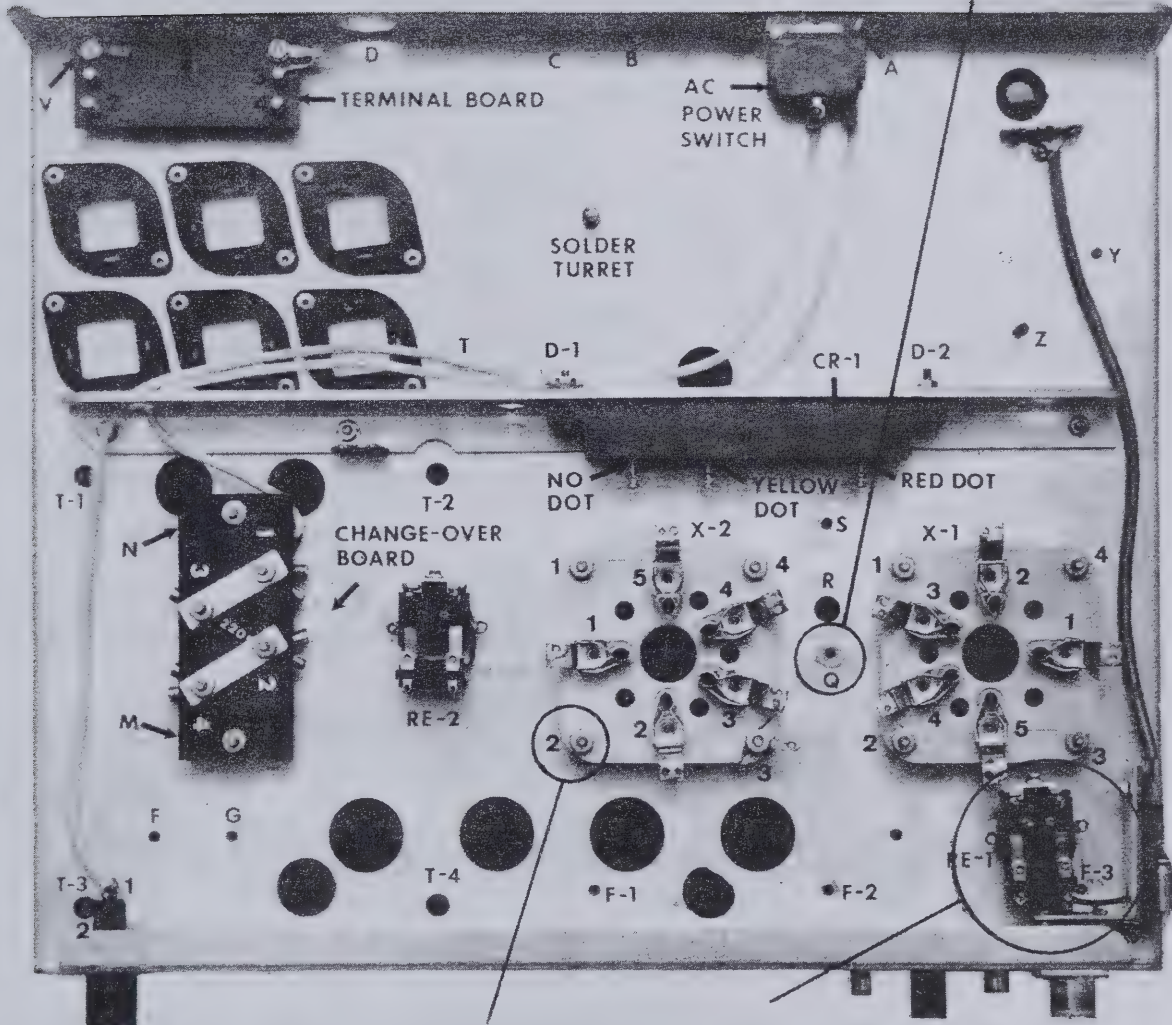
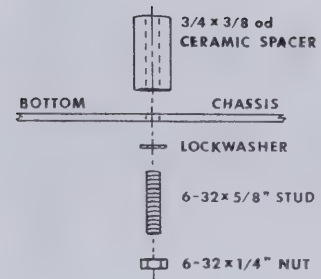
- Mount a 3/8 x 1/4" hexagonal spacer at hole N on the chassis. Use a 6-32 x 1" screw. Use a lockwasher between the spacer and the chassis. Thread the spacer unto the screw and tighten securely.
- Mount the remaining 3/8" x 1/4" hexagonal spacer at hole M in the same manner.
- Mount a 1/4" x 1/4" hexagonal spacer at tube socket X2-1. Use a 6-32 x 1" screw. Thread the spacer unto the screw and fasten securely. Use a lockwasher beneath the spacer and the chassis. See Inset 2 on Pictorial 3.
- Mount the second spacer at hole X2-2 in the same manner.
- Mount the third spacer at hole X2-3 in the same manner.
- Mount the fourth spacer at hole X2-4 in the same manner.
- Repeat the procedure for the spacers mounted at holes X1-1, X1-2, X1-3 and X1-4.

REFER TO PICTORIAL 4 FOR THE FOLLOWING STEPS

- Locate the following parts:
  - ( ) The 4 point terminal board, Part No. 28 on the Parts Pictorial.
  - ( ) Two 6.3 VAC double pole double throw relays.
  - ( ) The voltage changeover board.
  - ( ) Diode CR-1, Part No. 35 on the Parts Pictorial.
  - ( ) A 1/4" cable clamp.
  - ( ) 16 fiber washers.
  - ( ) Two jumbo 5 pin tube sockets.
  - ( ) Three No. 6 flat solder lugs, Part No. 9 on the Parts Pictorial.
  - ( ) The AC power switch. Part No. 38 on the Parts Pictorial.
  - ( ) The 3/4 x 3/8" od ceramic spacer.
  - ( ) A 6-32 x 5/8" stud.
- Insert the 6-32 x 5/8" stud in one end of the 3/4 x 3/8 od ceramic spacer. See inset 1 on Pictorial 4.

- Mount this assembly at hole Q on the chassis. Secure with a 6-32 x 1/4" nut. Use a lockwasher beneath the nut.
- Cut a piece of No. 20 brown hook-up wire 1" long. Strip back both ends and tin.
- Insert one end into terminal 4 of relay RE-1. Solder. Insert the other end into terminal 2 of relay RE-1. No solder. See Inset 2 on Pictorial 4.
- Mount this relay at hole K and J, using a 6-32 x 3/8" screw. Use a lockwasher beneath the screw. The locking key on the relay should fit into hole K on the chassis.
- Insert the wire coming from the SO-239 connector (J-2) into terminal 6 of the relay. See Inset 2 on Pictorial 4. Solder.
- Mount the other relay at holes P and O. Use a 6-32 x 3/8 screw. Use a lockwasher beneath the screw.
- Mount the changeover board as indicated in Pictorial 4 at holes M and N. Secure with a 6-32 x 5/16 nut. Use a lockwasher beneath the nut.
- Mount the 4 point terminal board at holes V and W as indicated in Pictorial 4. Mount a No. 6 flat solder lug on top of the board at BOTH holes. Secure with 6-32 x 1/4" nuts. Use a lockwasher beneath the nuts.
- Cut a piece of No. 20 bare tinned wire 1 1/2" long.
- Connect one end to the solder lug mounted at hole W. Solder. Connect the other end to terminal 3 of the 4 point terminal board. Solder.
- Mount the power diode at holes D-1 and D-2 on the reinforcing bar. Use 6-32 x 3/4" screws. Place the 1/4" cable clamp on the screw mounted at hole D-1. Use a 6-32 x 5/16 flat washer between the cable clamp and the lockwasher. Fasten with 6-32 x 5/16" nuts. Orient as shown in Pictorial 4. Use lockwashers beneath the nuts.
- Place a fiber washer over the standoffs mounted at holes X2-1, X2-2, X2-3 and X2-4. Mount a 5 pin tube socket on top of the 4 washers. Place another fiber washer on top of the tube socket. Place a No. 6 solder lug on the stud mounted at hole X2-3. Fasten with 6-32 x 5/16" nuts. See detail inset on Pictorial 4.
- Repeat this procedure for tube socket X-1. Do not mount the solder lug at hole X1-3.
- Cut two pieces of the white No. 12 stranded wire to the following lengths: One 20 5/8" long and one 18" long.

# PICTORIAL 4





- ( ) One #10 barrel lug, Part No. 10 on the Parts Pictorial.
- ( ) The BAND switch S-3.
- ( ) The TUNING capacitor C-16, E. F. Johnson type 154-2-9.
- ( ) The LOADING capacitor C-17, E. F. Johnson type 154-40A.
- ( ) Six 3/4" x 3/16" o.d. standoffs.
- ( ) Two #6 flat lugs, Part No. 9 on the Parts Pictorial.

— Mount the high voltage cover mounting bracket at holes K and L using 6-32 x 3/8 flathead screws. Fasten with a 6-32 x 1/4" nuts and lockwashers.

— Mount the No. 10 barrel lug at terminal C-1 on the loading capacitor, E. F. Johnson type 154-40A. Fasten with a 6-32 x 5/16 nut. Use a lockwasher beneath the nut.

— On the same capacitor, mount a No. 6 flat solder lug at terminal C-3 and C-4. Use a 6-32 x 5/16" nut. Use a lockwasher beneath the nut.

— Mount the loading capacitor. Use a 3/4" x 3/16" od tubular spacer between the back-up panel and the capacitor. Fasten with 6-32 x 1" flathead screws.

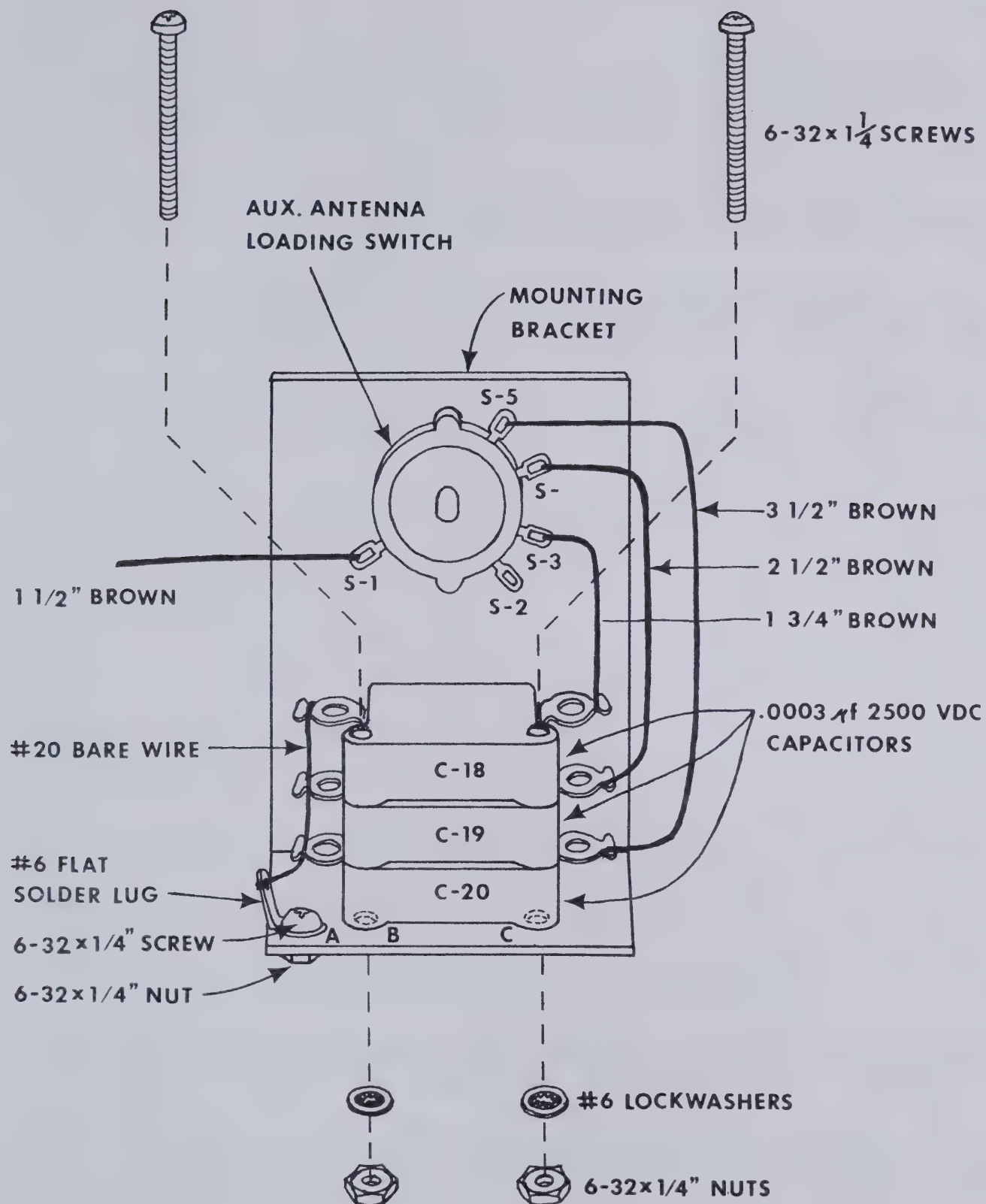
— Mount the tuning capacitor, E. F. Johnson type 154-2-9. Use 3/4" x 3/16" tubular spacers between the capacitor and the back-up panel. Fasten with 6-32 x 1" flathead screws. Orient as shown in Pictorial 5.

— Mount the band switch. Use 6-32 x 3/8 flathead screws. Tighten securely. Orient as shown in Pictorial 5.

#### REFER TO DETAIL 5 FOR THE FOLLOWING STEPS

— Locate the following components:

- ( ) Three .0003 2500 Volt mica transmitting capacitors, Part No. 46 on the Parts Pictorial.
- ( ) The auxiliary antenna loading switch bracket, Part No. 14 on the Parts Pictorial.
- ( ) The auxiliary antenna loading switch, a 4-position collective shorting switch, Part No. 41 on the Parts Pictorial.
- ( ) A No. 6 flat solder lug.



DETAIL 5

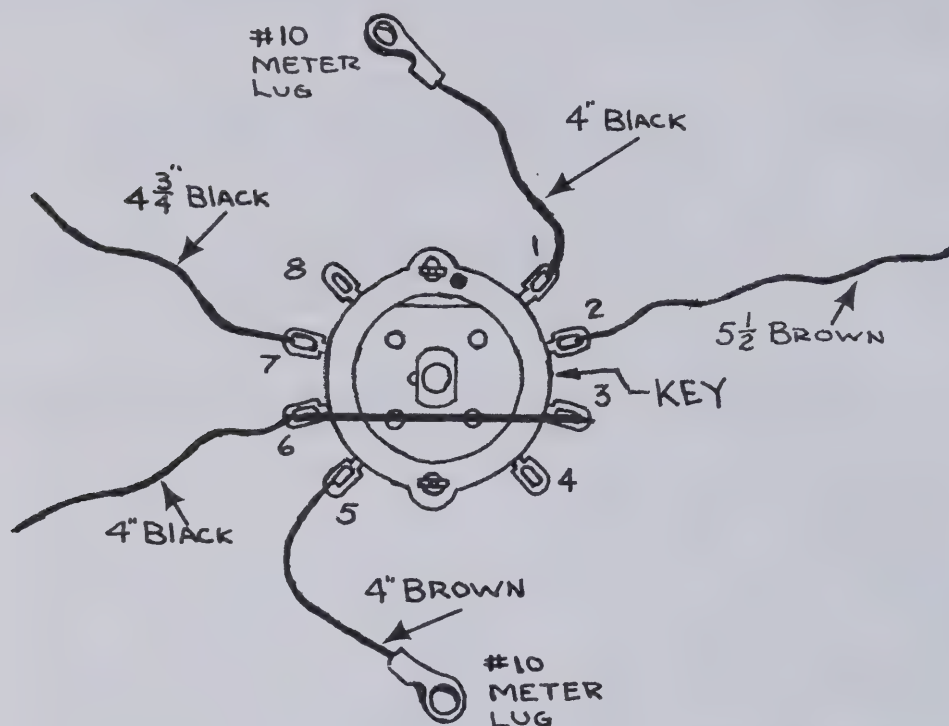




- Mount the No. 6 flat solder lug at hole A on the auxiliary loading switch bracket. Use a 6-32 x 1/4" screw. Use a 6-32 x 1/4" nut and lockwasher. Tighten securely. Bend the solder lug up 90° as shown in Detail 5.
- Mount the three .0003 2500 volt mica capacitors at holes B and C. Use 6-32 x 1-1/4" round head screws. Fasten with 6-32 x 1/4" nuts and lockwashers.
- Mount the switch at hole D on the auxiliary antenna loading switch bracket. Tighten the nut only finger tight as it is to be removed at a later step. Use 3/8" switch hardware provided.
- Cut a piece of No. 20 bare wire 1 3/4" long. Insert one end into the No. 6 solder lug installed at hole A. Solder. Solder the three left hand tabs into the No. 20 wire as shown in Detail 5.
- Locate the brown No. 20 hook-up wire and cut four pieces to the following lengths:
  - ( ) One piece 1 3/4" long
  - ( ) One piece 1 1/2" long
  - ( ) One piece 2 1/2" long
  - ( ) One piece 3 1/2" long.
- Strip back both ends 1/4" and tin.
- Referring to Detail 5 connect one end of the 1 1/2" piece to terminal S-1 on the auxiliary antenna loading switch. Solder.
- Connect one end of the 1 3/4" piece to terminal S-3 of the auxiliary antenna loading switch. Solder.
- Connect the other end of the 1 3/4" No. 20 brown hook-up wire to capacitor C-18 as shown in Detail 5. Solder.
- Connect one end of the 2 1/2" piece of the No. 20 brown hook-up wire to terminal S-4 of the auxiliary antenna loading switch. Solder. Connect the other end to capacitor C-19. Solder.
- Connect one end of the 3 1/2" piece of No. 20 brown hook-up wire to terminal S-5 of the auxiliary antenna loading switch. Solder. Connect the other end to capacitor C-20. Solder. Set this assembly aside. It will be installed at a later step.

REFER TO DETAIL 6 FOR THE FOLLOWING STEPS

- Locate the plate meter switch, a 2 pole 3 position switch, Part No. 39 on the Parts Pictorial.



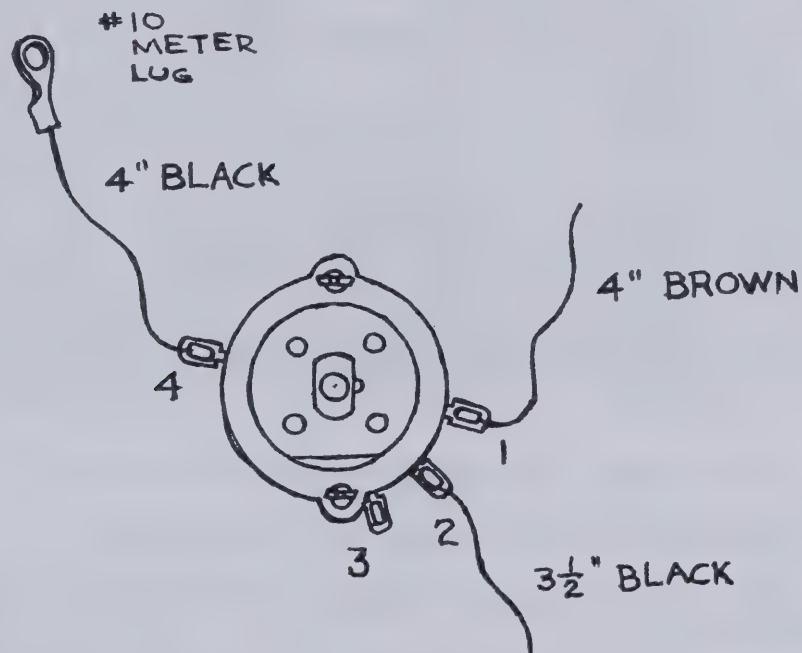
DETAIL 6

- Cut a piece of No. 20 bare hook-up wire 2" long. Connect one end to terminal 6 of the plate meter switch. No solder. Connect the other end to terminal 3 of the plate meter switch. Solder. Form as shown in Detail 6 to clear the rotating component of the switch.
- Locate the brown and black No. 20 hook-up wire. Cut the following lengths:
- ( ) Brown - One piece 4" long.
  - ( ) Brown - One piece 5 1/2" long.
  - ( ) Black - Two pieces 4" long.
  - ( ) Black - One piece 4 3/4" long.
- Strip back both ends of all pieces 1/4" and tin.

- Locate two No. 10 flat meter lugs, Part No. 8 on the Parts Pictorial. Solder a lug to one end of a 4" piece of No. 20 black hook-up wire.
- Solder the other solder lug to one end of a 4" piece of No. 20 brown hook-up wire.
- Using the black piece just prepared connect to terminal 1 of the plate meter switch. Solder.
- Using the 5 1/2" piece of No. 20 brown hook-up wire connect one end to terminal 2 of the plate meter switch. Solder.
- Using a 4" piece of No. 20 brown hook-up wire with the ring lug attached connect to terminal 5 of the plate meter switch. Solder.
- Using a 4" piece of black No. 20 hook-up wire connect to terminal 6 of the plate meter switch. Solder 2.
- Using the 4 3/4" piece of No. 20 black hook-up wire, connect one end to terminal 7. Solder. Place this switch aside, it will be installed later.

REFER TO DETAIL 7 FOR THE NEXT STEPS

- Locate the wattmeter switch, Part No. 40 on the Parts Pictorial. This is a 3 position, single pole switch.



DETAIL 7



— Locate the No. 20 brown and black hook-up wire and cut the following pieces:

( ) Black - One piece 4" long.

( ) Black - One piece 3 1/2" long.

( ) Brown - One piece 5 1/2" long.

( ) Brown - One piece 4" long.

— Strip back both ends of all pieces 1/4" and tin.

— Locate two No. 10 flat meter lugs, Part No. 8 on the Parts Pictorial.

— Solder a No. 10 meter lug to one end of the 4" piece of black No. 20 hook-up wire.

— Solder a lug to one end of the 5 1/2" piece of No. 20 brown hook-up wire.

— Connect one end of the 4" piece of No. 20 brown hook-up wire to terminal 1 of the wattmeter switch. Solder.

— Connect one end of the 3 1/2" piece of No. 20 black hook-up wire to terminal 2 of the wattmeter switch. Solder.

— Connect one end of the 4" piece of No. 20 black hook-up wire with meter lug attached to terminal 4 of the wattmeter switch. Solder. Lay this switch aside along with the 5 1/2" piece of No. 20 brown hook-up wire with the meter lug attached. They will be installed at a later step.

#### REFER TO PICTORIAL 6 FOR THE FOLLOWING STEPS

— Locate the following components:

( ) The front panel.

( ) The plate meter.

( ) The wattmeter.

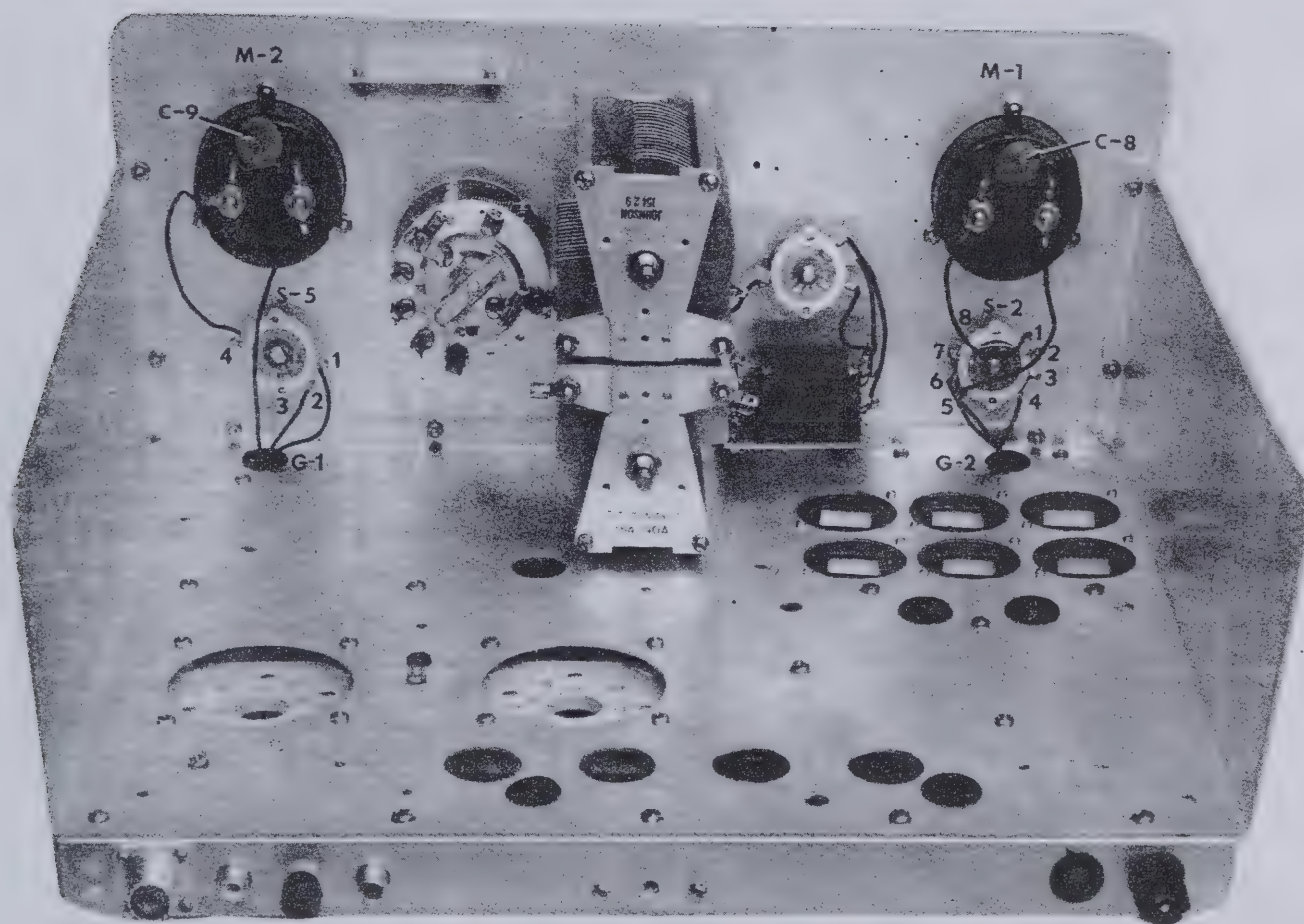
( ) The plate meter switch prepared previously.

( ) The wattmeter switch prepared previously.

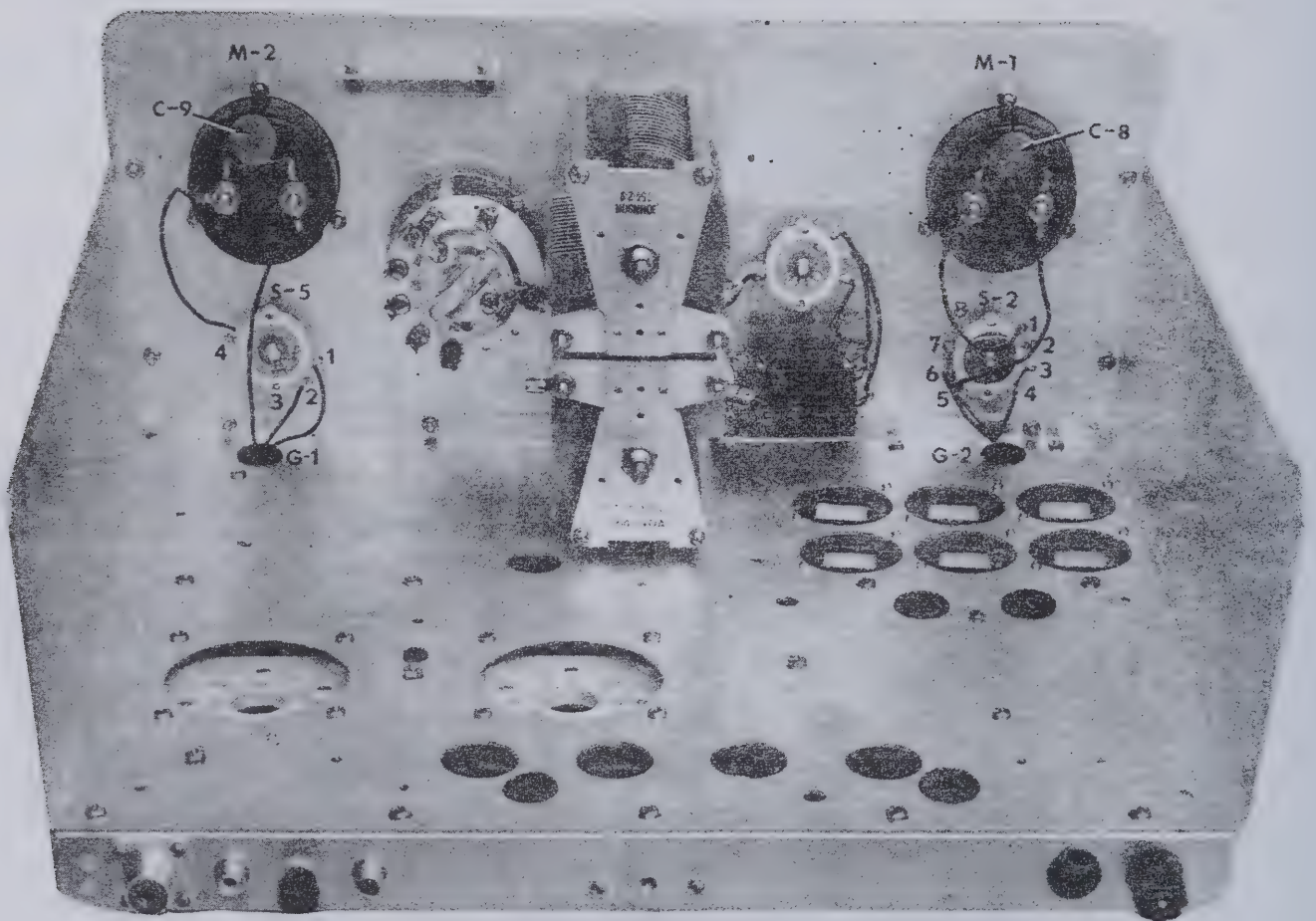
( ) The auxiliary antenna loading switch and bracket prepared previously.

( ) The pilot light assembly and the pilot bulb.

PICTORIAL 6



PICTORIAL 6





( ) Two .01 1KV disc ceramic capacitors.

( ) Four No. 10 flat meter lugs. Part No. 8 on the Parts Pictorial.

( ) The name plate.

( ) Two tinnerman nuts, Part No. 31 on the Parts Pictorial.

( ) Two large round knobs.

( ) Four bar knobs.

\_\_\_ Trim both leads of the two .01 1KV disc ceramic capacitors to a length of 3/4". Solder a No. 10 flat meter lug on each lead.

\_\_\_ Mount the front panel over the backup panel. Make certain that all edges are flush with the backup panel.

\_\_\_ Mount the plate meter switch at the indicated position on the front panel. Use 3/8" switch hardware provided. Do not fasten securely until all components are mounted on the front panel.

\_\_\_ Remove the nut holding the switch to the auxiliary antenna loading switch bracket. Mount the antenna loading switch bracket and capacitors at the indicated hole. Do not tighten securely until all components are mounted.

\_\_\_ Locate the wattmeter switch and mount on the front panel at the indicated position. Do not tighten securely.

\_\_\_ Mount the wattmeter in its position. Fasten with 4-40 x 1/4" nuts and lockwashers. Do not fasten securely until the plate meter has been installed.

\_\_\_ Mount the plate meter in the location indicated. Fasten with 4-40 x 1/4" nuts and lockwashers.

\_\_\_ Insert the bulb into the pilot light.

\_\_\_ Mount the pilot light in the hole indicated. Do not fasten securely.

\_\_\_ Now line the front panel and the backup panel so that all edges are flush and even.

\_\_\_ Tighten the pilot light securely.

\_\_\_ Tighten all switch nuts securely.

\_\_\_ Tighten all the 4-40 nuts on the meters securely.

\_\_\_ Install the name plate and fasten with the two tinnerman nuts.

- Rotate the plate meter switch to the maximum counter clockwise position as viewed from the front of the chassis.
- Mount a bar knob so that the white pointer is aligned with the **OFF** position. Tighten securely.
- Rotate the auxiliary antenna loading switch to the maximum counter clockwise position.
- Mount a bar knob so that the white pointer is aligned with the **0** marking.
- Rotate the band switch to the maximum counter clockwise position.
- Mount a bar knob so that the white pointer is aligned with the **80** meter position. Tighten securely.
- Rotate the wattmeter switch to the maximum counter clockwise position.
- Mount a bar knob so that the white pointer is aligned with the **OFF** position. Fasten securely.
- Fully mesh the loading capacitor. Mount a round knob so that the white pointer points to **0**. Fasten securely.
- Fully open the tuning capacitor. Mount a round knob so that the white pointer points to **0**. Fasten securely.

NOTE: During the rest of the construction, when you place the Bandit on its face, be certain to put a soft cloth between the Bandit front panel and the working surface. This will protect the front panel from scratches.

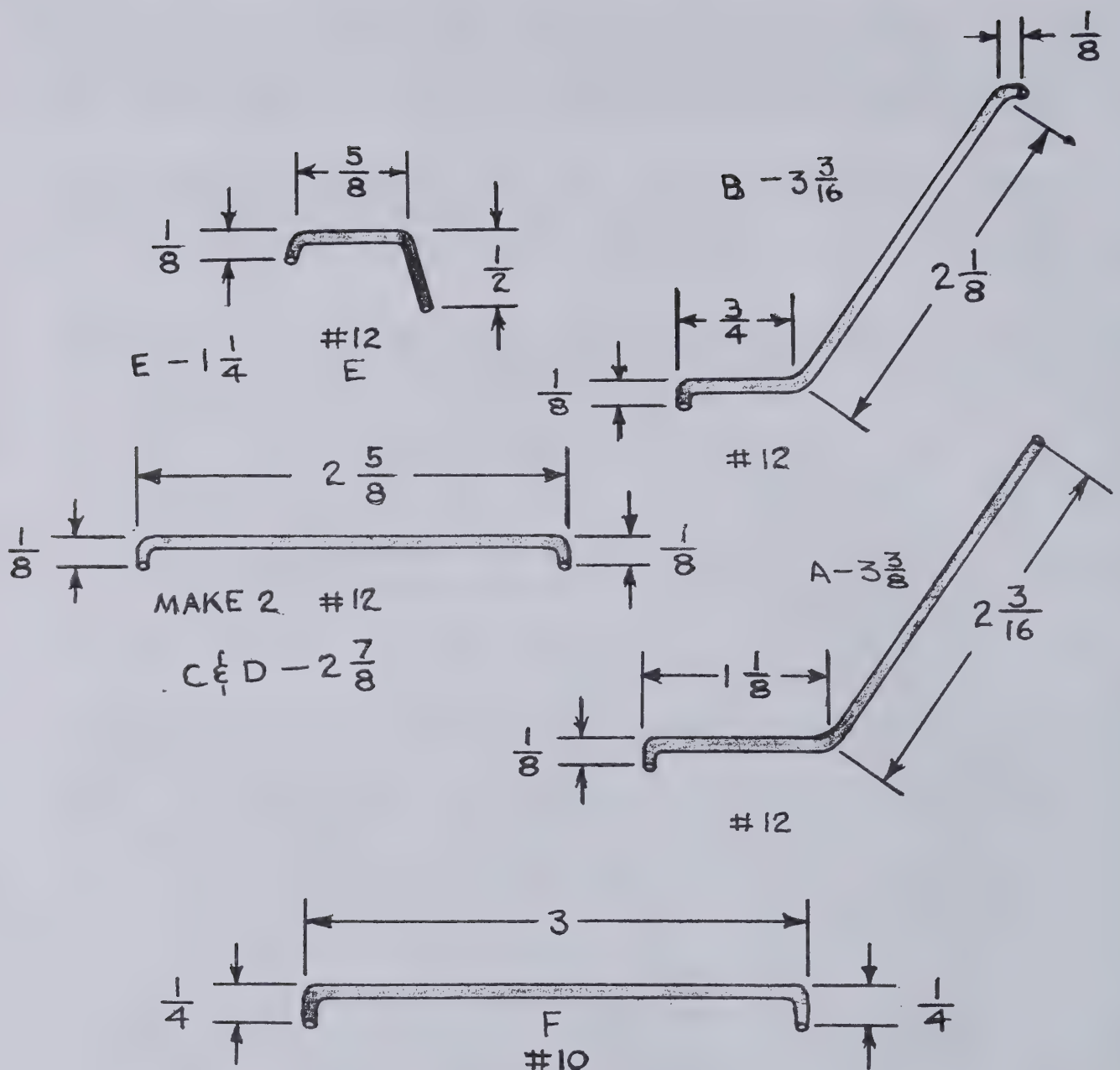
- Mount one of the .01 1KV disc ceramic capacitors with No. 10 meter lugs attached to the terminals of the wattmeter. Do not fasten. Mount the other .01 1KV capacitor across the terminals of the plate meter. Do not fasten.
- Connect the meter lug, soldered to the 4" black wire on terminal 4 of the wattmeter switch, to the positive terminal of the wattmeter. Use the hardware provided with the meter. Tighten securely.
- Locate the 5 1/2" brown wire with the meter lug attached that had been prepared previously. Fasten to the negative terminal of the wattmeter. Use hardware provided with the meter and tighten securely. Thread this wire through grommet hole G-1.

- Locate the brown wire with meter lug attached coming from terminal 5 of the plate meter switch. Fasten to the positive terminal of the plate meter using the hardware provided. Tighten securely.
- Locate the black wire with meter lug attached coming from terminal 1 of the plate meter switch. Fasten to the negative terminal of the plate meter using the hardware provided. Fasten securely.
- Locate the brown wire coming from terminal S-1 of the auxiliary antenna loading switch. Connect to the No. 6 solder lug placed on terminal C-3 of the loading capacitor. Solder.

REFER TO PICTORIAL 7 FOR THE FOLLOWING STEPS

- Locate the following parts:
  - ( ) The 80, 40 and 20 meter coil, inductor L-3, Part No. 25 on the Parts Pictorial.
  - ( ) The No. 12 bare tinned copper wire.
- Mount the 80, 40 and 20 meter coil at hole Z and Y on the main chassis. Use 6-32 x 3/8" round head screws. Use lockwashers beneath the screws. Orient the coil as shown in Pictorial 7. Use caution in tightening the screws as the ceramic will crack.
- Cut 5 pieces of No. 12 tinned wire to the following lengths:
  - ( ) One piece 1 3/4" long.
  - ( ) One piece 3 3/8" long.
  - ( ) Two pieces 3 11/16" long.
  - ( ) One piece 3 7/8" long.
- Cut a piece of No. 10 bare tinned wire 3 1/2" long.
- Bend all pieces as shown in Detail 8. Lengths are approximate. Cut to fit.

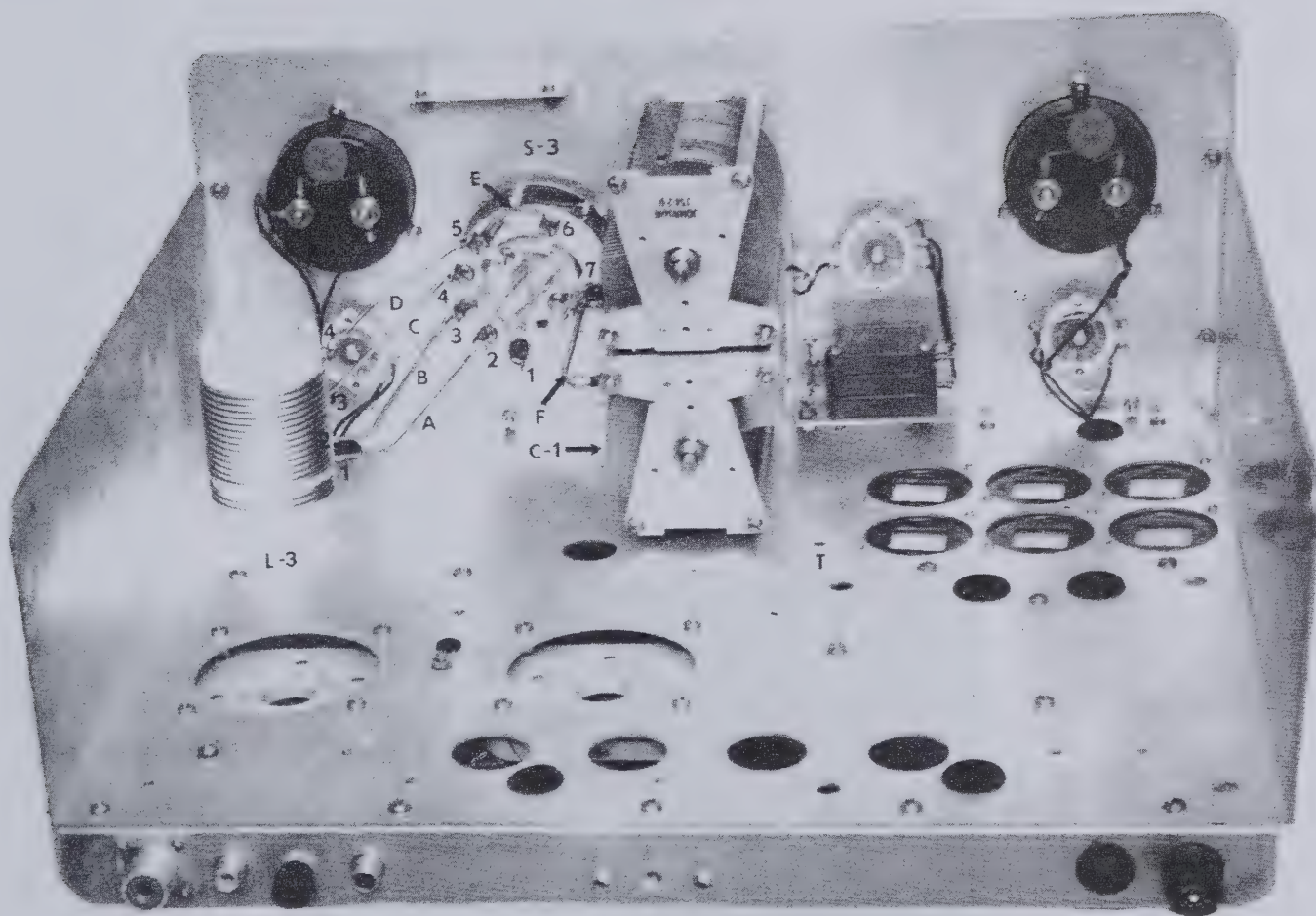




DETAIL 8

- Insert one end of the  $3\frac{1}{2}$ " piece of No. 10 wire into terminal S-7 of the band switch. Solder. Insert the other end into the ring lug previously installed at terminal C-1 of the loading capacitor. Solder.
- Referring to Detail 8, locate piece A. Insert one end into position 1 of the 80 meter coil. Solder. Insert the other end into terminal S-2 of the band switch. No solder.

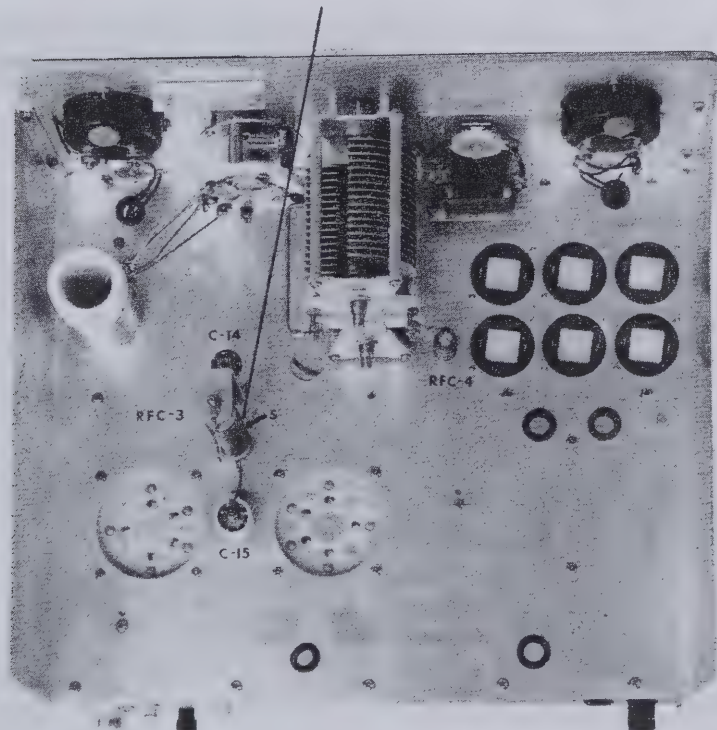
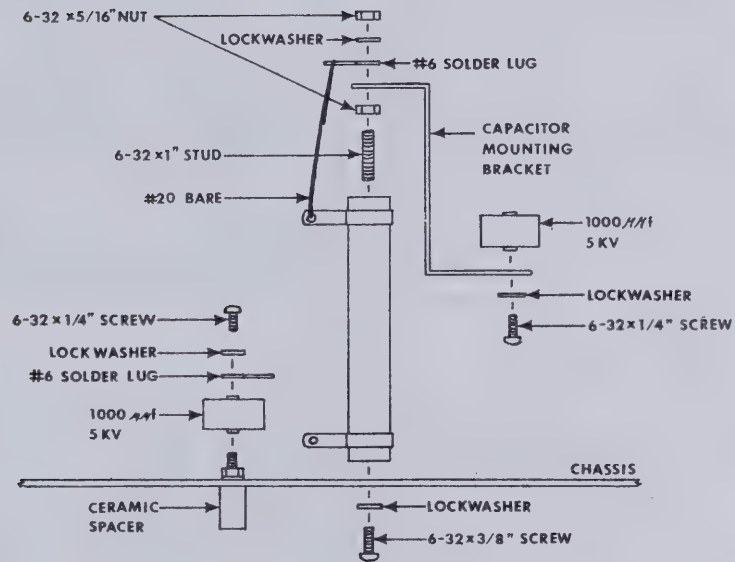
PICTORIAL 7



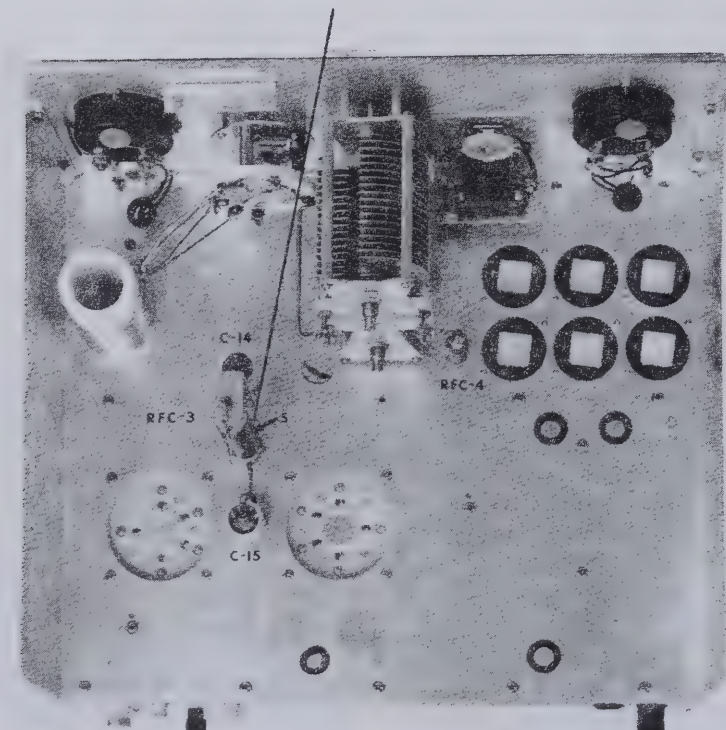
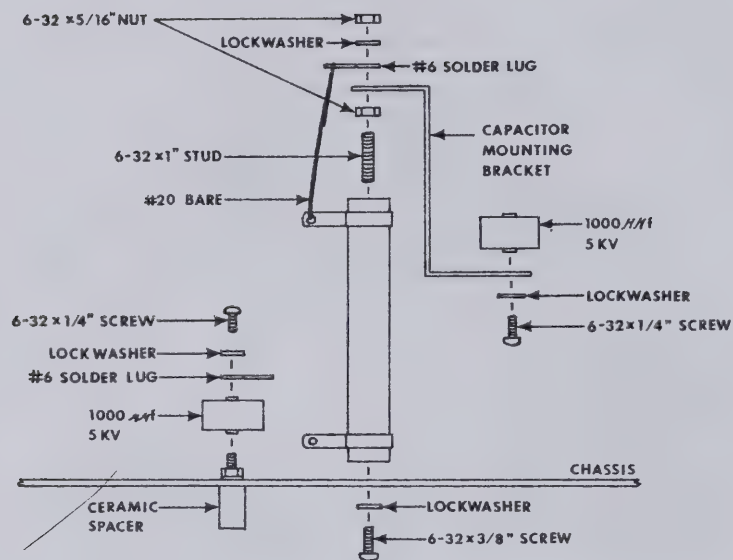




## PICTORIAL 8



## PICTORIAL 8



- Insert one end of piece B into position 2 on the 80 meter coil. Solder. Insert the other end into terminal 3 on the band switch. Solder.
- Insert one end of piece C into position 3 of the 80 meter coil. Solder. Insert the other end into terminal 4 of the band switch. Solder.
- Insert one end of piece D into position 4 on the 80 meter coil. Solder. Insert the other end into terminal 5 of the band switch. Solder.

AT THIS POINT, RECHECK ALL YOUR CONNECTIONS TO BE SURE THAT YOU HAVE NO COLD SOLDER JOINTS.

- Insert the 1/2" end of piece E into the ring lug attached to terminal 5 of the band switch. Solder. Insert the other end into terminal 6 of the band switch. Solder.

REFER TO PICTORIAL 8 FOR THE FOLLOWING STEPS

- Locate the following parts:

- ( ) The National RF choke, RFC-4, Part No. 43 on the Parts Pictorial.
- ( ) The Antran RF choke, RFC-3, Part No. 42 on the Parts Pictorial.
- ( ) Two 1000 micro-micro-farad 5 KV capacitors, C-16 and C-17, Part No. 47 on the Parts Pictorial.
- ( ) The capacitor mounting bracket, Part No. 12 on the Parts Pictorial.
- ( ) Two No. 6 flat solder lugs, Part No. 9 on the Parts Pictorial.

- Mount the National choke at hole T on the main chassis. Use a 6-32 x 1/4" nut. Do not use a lockwasher.

- Connect the lead from the upper end of the National RF choke to the solder lug installed in a previous step at terminal C-4 of the loading capacitor. Solder.

- Mount one 1000 micro-micro-farad 5 KV capacitor on the stud installed at hole Q on the main chassis. Thread the capacitor on to the stud securely. Mount a No. 6 flat solder lug on top of the capacitor. Fasten with 6-32 x 1/4" screw. Use a lockwasher beneath the screw. See Inset 1 on Pictorial 8.



- Mount the Antran RF choke at hole S on the main chassis. Use a 6-32 x 3/8" screw. Use a lockwasher beneath the screw.
- Mount the remaining 1000 micro-micro-farad 5 KV capacitor to the capacitor mounting bracket using a 6-32 x 1/4" screw. Use a lockwasher beneath the screw.
- Insert a 6-32 x 1" stud into the RF choke just installed. Secure with a 6-32 x 5/16" nut.
- Mount the capacitor mounting bracket to the RF choke using a 6-32 x 5/16" nut. Mount a No. 6 flat solder lug beneath the nut. Use a lockwasher beneath the nut.
- Cut a piece of No. 20 bare copper wire 1 1/4" long. Connect one end to the top lug of the RF choke. Solder. Connect the other end to the solder lug installed on top of the capacitor mounting bracket. Solder.

REFER TO PICTORIAL 9 FOR THE FOLLOWING STEPS

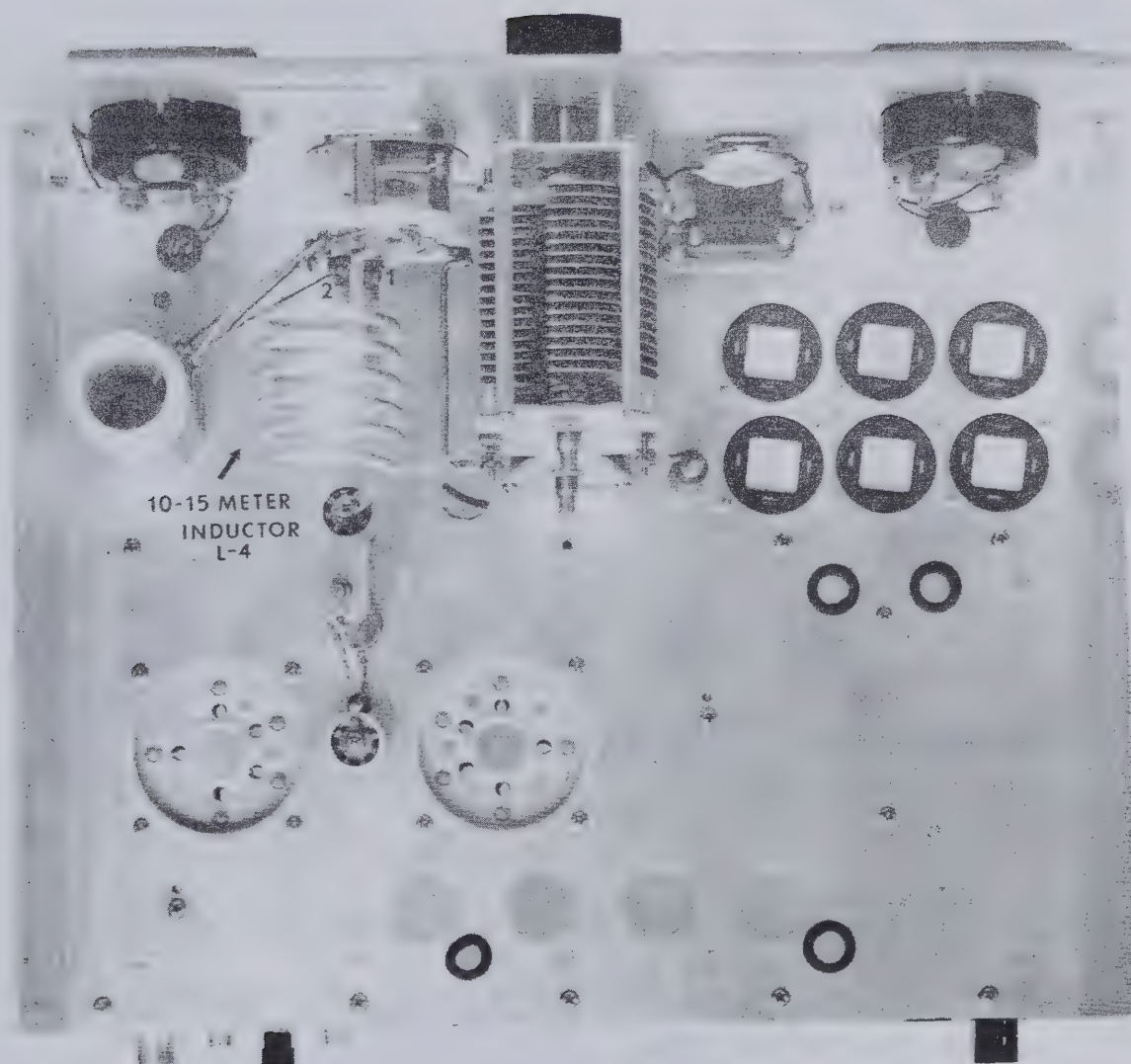
- Locate the 10 and 15 meter inductor, Part No. 26 on the Parts Pictorial.
- Mount the 10 and 15 meter inductor on the band switch and the 1000 micro-micro-farad capacitor as shown in Pictorial 9. The 10 meter tap (3 turns from the end) mounts on terminal 1 of the band switch. Solder. The 15 meter tap (one end of the inductor) mounts on terminal 2 of the band switch. Solder 2.
- Mount the opposite end of the inductor to the 1000 micro-micro-farad capacitor installed on the mounting bracket. Fasten with a 6-32 x 1/4" screw. Use a lockwasher beneath the screw.
- Form the mounting tab and connect to terminal C-1 of the TUNING capacitor. Fasten with a 6-32 x 5/16" nut and lockwasher. Tighten securely.

This completes wiring of the RF section and the front panel control. Recheck all of your joints to make certain that you have no cold solder joints.

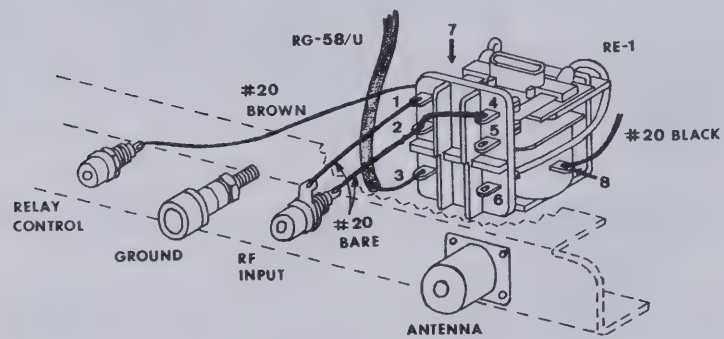
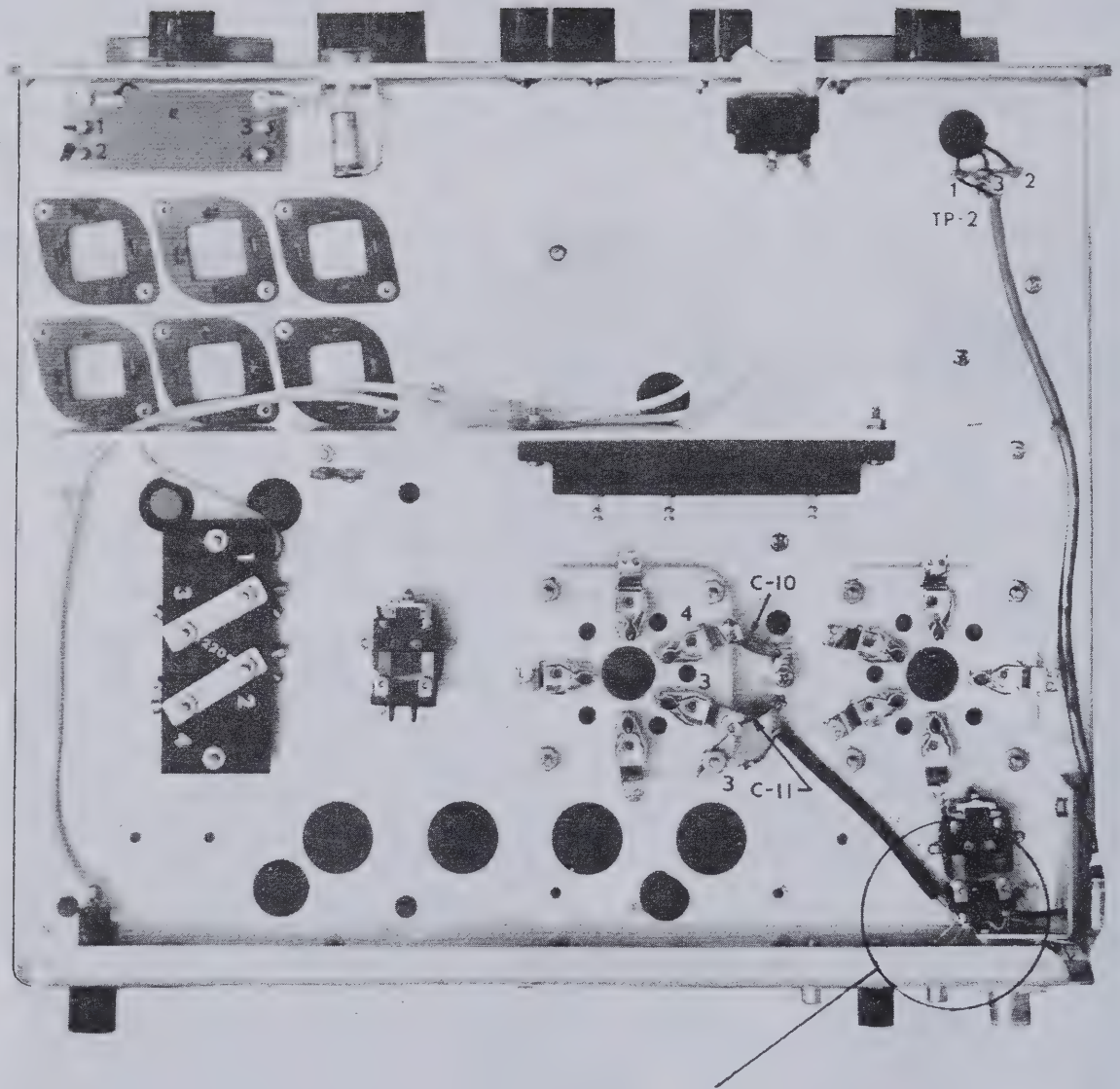
REFER TO PICTORIAL 10 FOR THE FOLLOWING STEPS

- Locate the following parts:
  - ( ) Two .01 1KV disc capacitors.

## PICTORIAL 9



## PICTORIAL 10



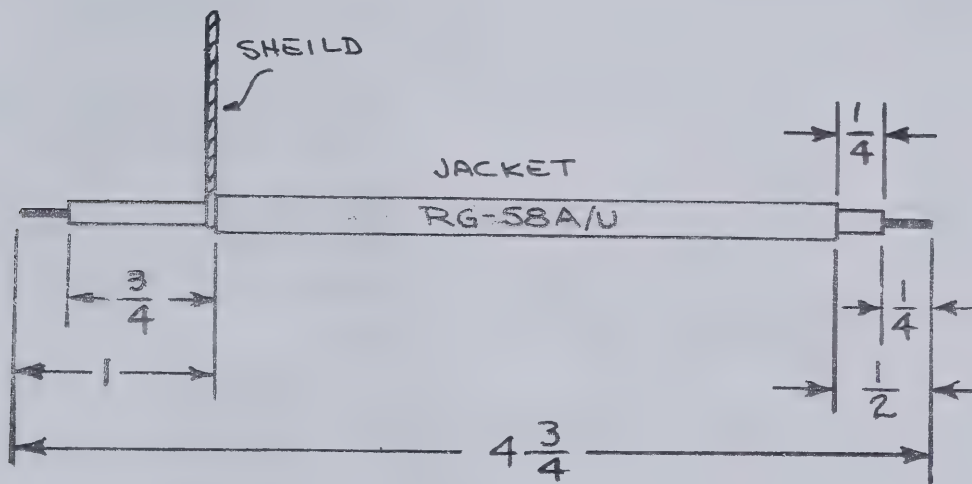


( ) The RG-58A/U cable.

( ) A No. 6 V solder lug, Part No. 11 on the Parts Pictorial.

\_\_\_ Cut a piece of RG-58A/U cable to a length of  $4 \frac{3}{4}$ ".

\_\_\_ Refer to Detail 9 and prepare the cable as follows:



DETAIL 9

( ) Strip back the outer jacket  $\frac{1}{2}$ " from one end.

( ) Carefully remove the shield the entire  $\frac{1}{2}$ ".

( ) Strip back the inner insulation  $\frac{1}{4}$ ".

( ) Tin the center conductor.

\_\_\_ Prepare the other end of the cable in the following manner:

( ) Remove the outer jacket 1" from the end.

( ) Carefully fan out the shield and twist together.

( ) Tin the end of the shield.

( ) Strip back the inner insulation  $\frac{1}{4}$ " from the end and tin the center conductor.

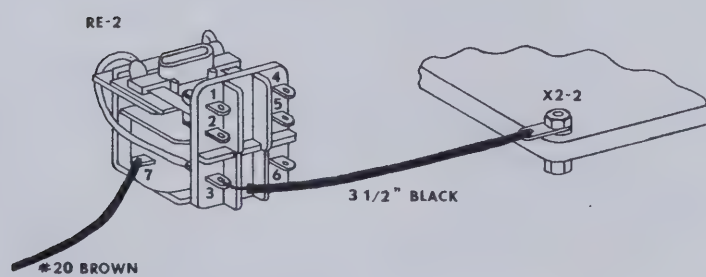
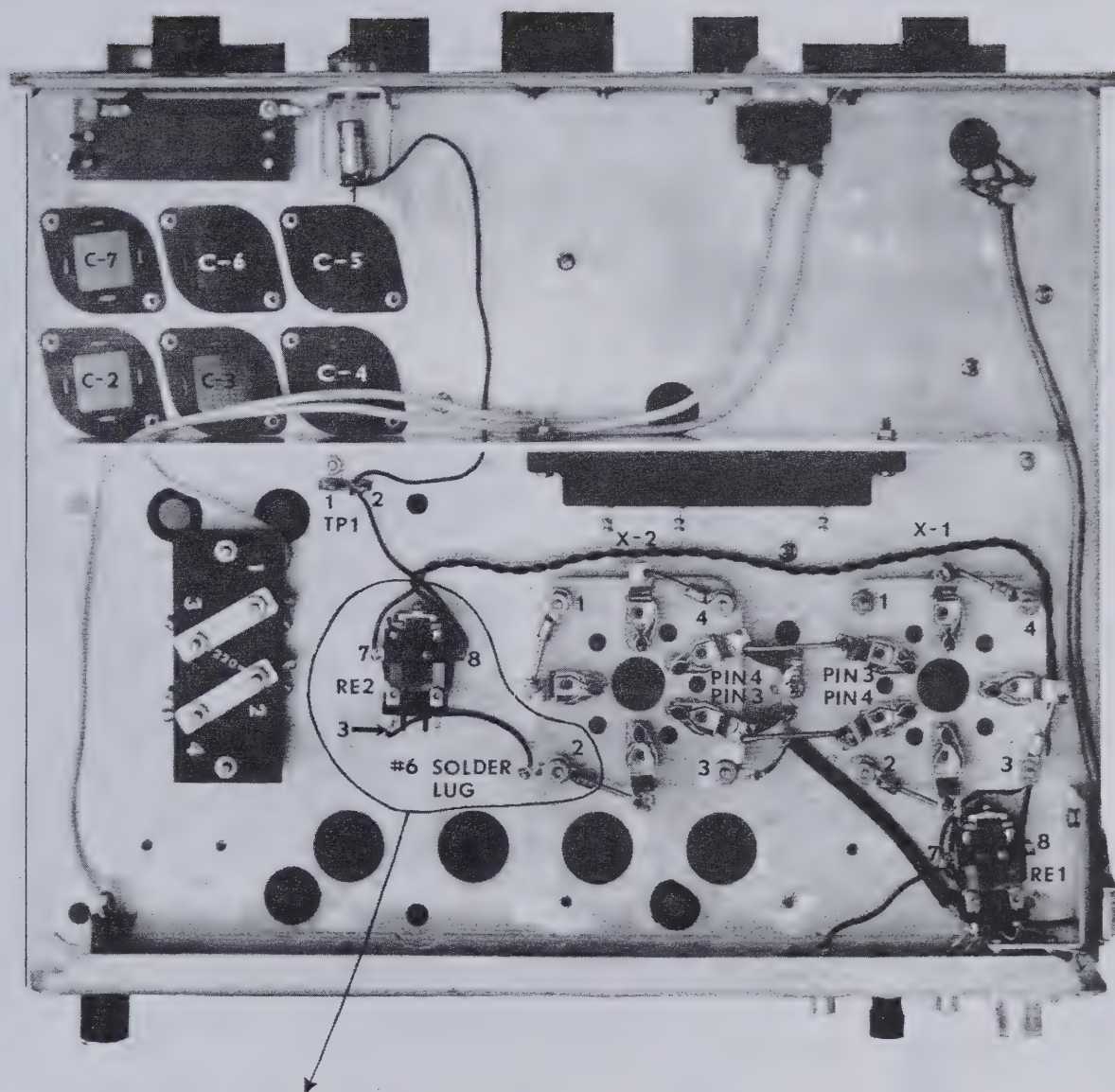
\_\_\_ Mount the No. 6 V solder lug to the ceramic stand-off mounted at hole Q. Use a 6-32 x  $\frac{1}{4}$ " screw. Use a lockwasher beneath the screw. Orient as shown in Pictorial 10.

- Insert the end of the RG-58A/U cable without the shield pigtail in terminal 3 of Relay 1. Solder. Use caution that you do not melt the center conductor. See Inset 1 on Pictorial 10.
- Connect the other end of the center conductor to the V solder lug just mounted on the ceramic post between the two tube sockets. No solder.
- Connect the shield pigtail to the No. 6 solder lug mounted at hole X2-3. Solder.
- Cut two pieces of No. 20 bare hook-up wire 1" long. Insert one end into terminal 2 of Relay 1. Solder 2. Insert the other end into the center contact of the RF Input jack. Solder.
- Insert one end of the remaining piece into terminal 1 of Relay 1. Solder. Insert the other end into the ground lug on the RF Input jack. Solder. See Inset on Pictorial 10.
- Connect one of the .01 capacitors to the No. 6 V solder lug installed on the ceramic standoff. Solder. Connect the other end of the capacitor to the small hole in pin 4 of X2. Solder.
- Connect the other .01 1 KV disc ceramic capacitor to the other side of the No. 6 V solder lug. Solder 2. Connect the other end to the small hole in pin 3 of X2. Solder.
- Locate the 4" brown wire coming from terminal 6 of the plate meter switch. Connect to the solder lug mounted at hole V on the terminal board. Solder.
- Locate the 5 1/2" brown wire coming from terminal 2 of the plate meter switch. Connect to terminal 1 of the terminal board. No solder.
- Locate the 4 3/4" black wire coming from terminal 7 of the plate meter switch. Connect to terminal 2 of the terminal board. No solder.
- Locate the 4" brown wire coming from terminal 1 of the wattmeter switch. Connect to TP2-1. Solder 2.
- Locate the 3 1/2" black wire coming from terminal 2 of the wattmeter switch. Connect to TP2-3. Solder 2.
- Locate the 5 1/2" brown wire coming from the negative terminal of the wattmeter. Connect to TP2-2. Solder.

REFER TO PICTORIAL 11 FOR THE FOLLOWING STEPS

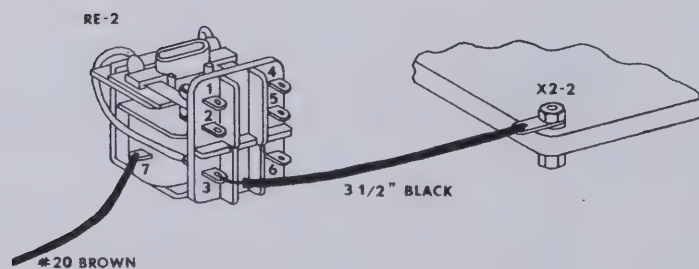
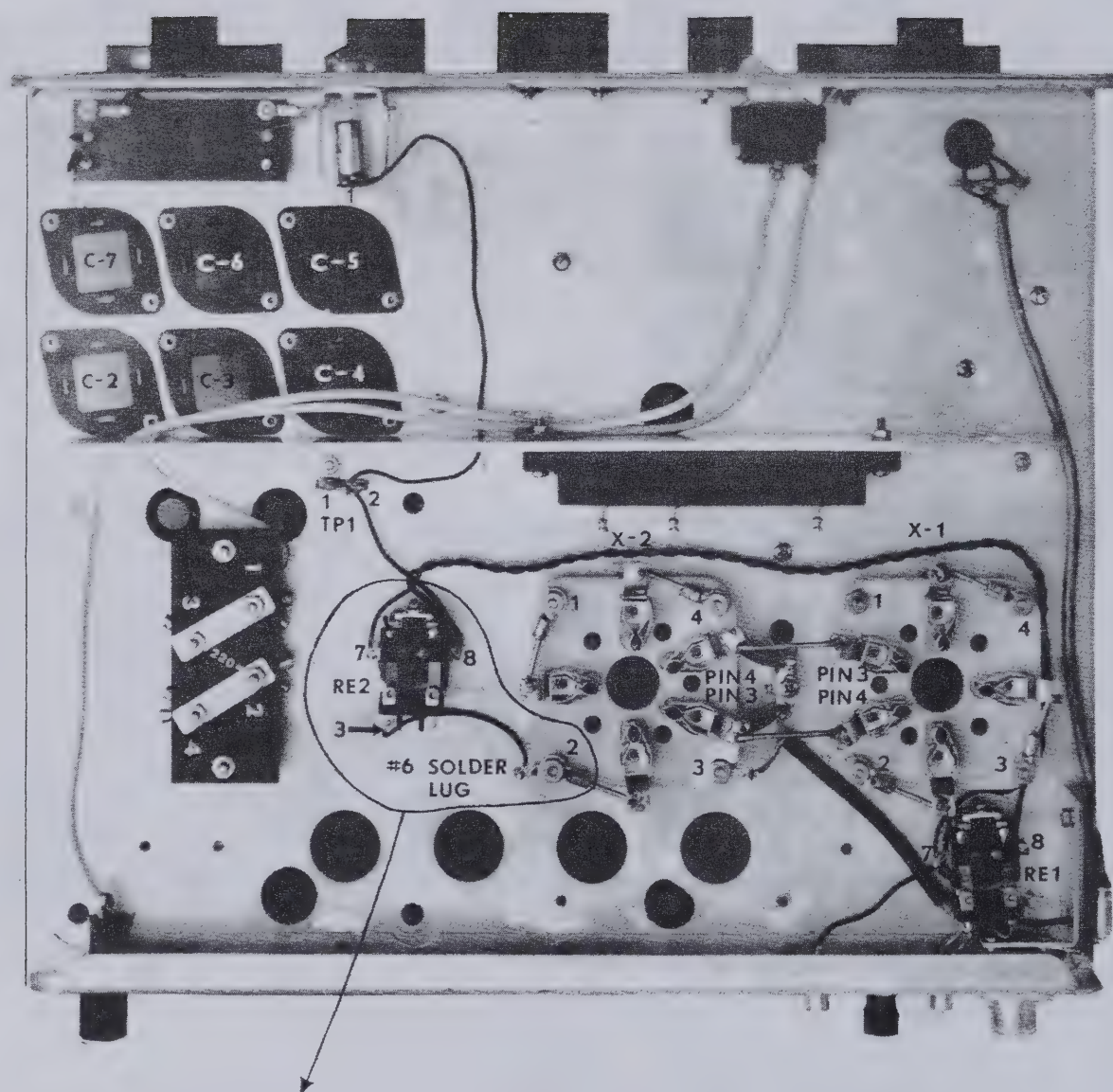
- Locate the following parts:

## PICTORIAL 11





## PICTORIAL 11



( ) Six No. 6 barrel lugs, Part No. 10 on the Parts Pictorial.

( ) One No. 6 flat solder lug, Part No. 9 on the Parts Pictorial.

— Mount a No. 6 barrel lug at X2-1, X2-2 and X2-4. Mount a No. 6 flat solder lug at hole X2-2. Orient as shown in Pictorial 11. Secure with 6-32 x 5/16" nuts. Use a lockwasher beneath the barrel lug.

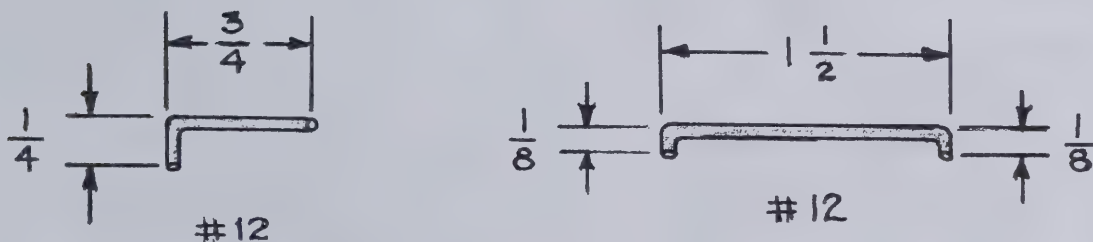
— Mount a No. 6 barrel lug at X1-2, X1-3 and X1-4. Orient as shown in Pictorial 11. Fasten with 6-32 x 5/16" nuts. Use a lockwasher beneath the barrel lug.

— Cut 8 pieces of No. 12 bare tinned wire to the following lengths:

( ) Six pieces 1" long.

( ) Two pieces 1 3/4" long.

— Bend the wire as shown in Detail 10.



DETAIL 10

— Insert one of the 1 3/4" pieces into the large hole of X2-pin 4. Solder. Insert the other end into X1-pin 3. Solder.

— Insert the second piece into the large hole of X2-pin 3. Solder. Insert the other end into X1-pin 4. Solder.

— Using one of the 1" pieces insert (from the bottom) the 1/4" end into the large hole at X2-pin 5. Insert the straight end into the barrel lug mounted at hole X2-4. Solder both connections.

— Repeat for X2-pin 1 and X2-pin 2.

— Repeat the preceding two steps for X1-1, X1-2 and X1-5. Solder both ends.

— Locate the brown and black No. 20 hookup wire. Cut the following lengths:

( ) Black - Two pieces 3 1/2" long.

( ) Black - One piece 9" long.

( ) Black - One piece 18" long.

( ) Brown - One piece 3 1/2" long.

( ) Brown - One piece 18" long.

— Strip back both ends of each piece 1/4" and tin.

— Twist together the two 18" pieces for the entire length.

— Untwist approximately 1 1/2" from each end.

— Insert one end of the brown wire of the twisted pair in terminal 7 of Relay 2. Solder. Connect the black wire of the twisted pair to terminal 8 of Relay 2. No solder. Route the twisted pair to Relay 1 as shown in Pictorial 11.

— Connect the black wire to terminal 8 of Relay 1. Solder. Connect the brown wire to terminal 7 of Relay 1. No solder.

— Connect one end of one 3 1/2" piece of No. 20 black hookup wire to terminal 8 of Relay 2. Solder 2. Connect the other end of this wire to TP1-2. No solder.

— Connect one end of the 3 1/2" piece of No. 20 brown hookup wire to terminal 7 of Relay 1. Solder 2. Connect the other end to the center contact of the Relay Control jack on the rear panel. Solder.

— Using the 9" piece of black wire connect one end to TP1-2. No solder. Route this wire through hole in the reinforcing bar to terminal 1 of the pilot light. Solder.

— Connect one end of the remaining 3 1/2" black wire to terminal 3 of Relay 2. No solder. Connect the other end to the No. 6 flat solder lug mounted at hole X2-2 on tube socket X2. No solder.

#### REFER TO PICTORIAL 12 FOR THE FOLLOWING STEPS

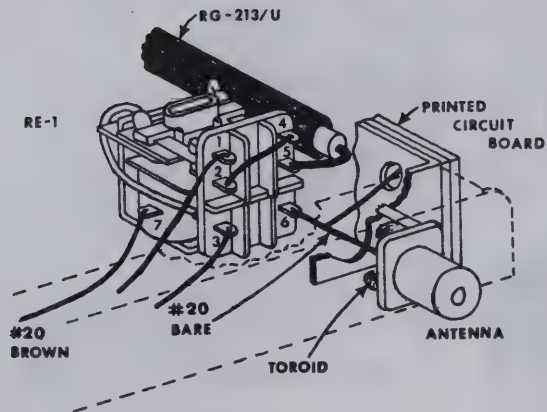
— Locate the following components:

( ) Six 140 microfarad electrolytic capacitors.

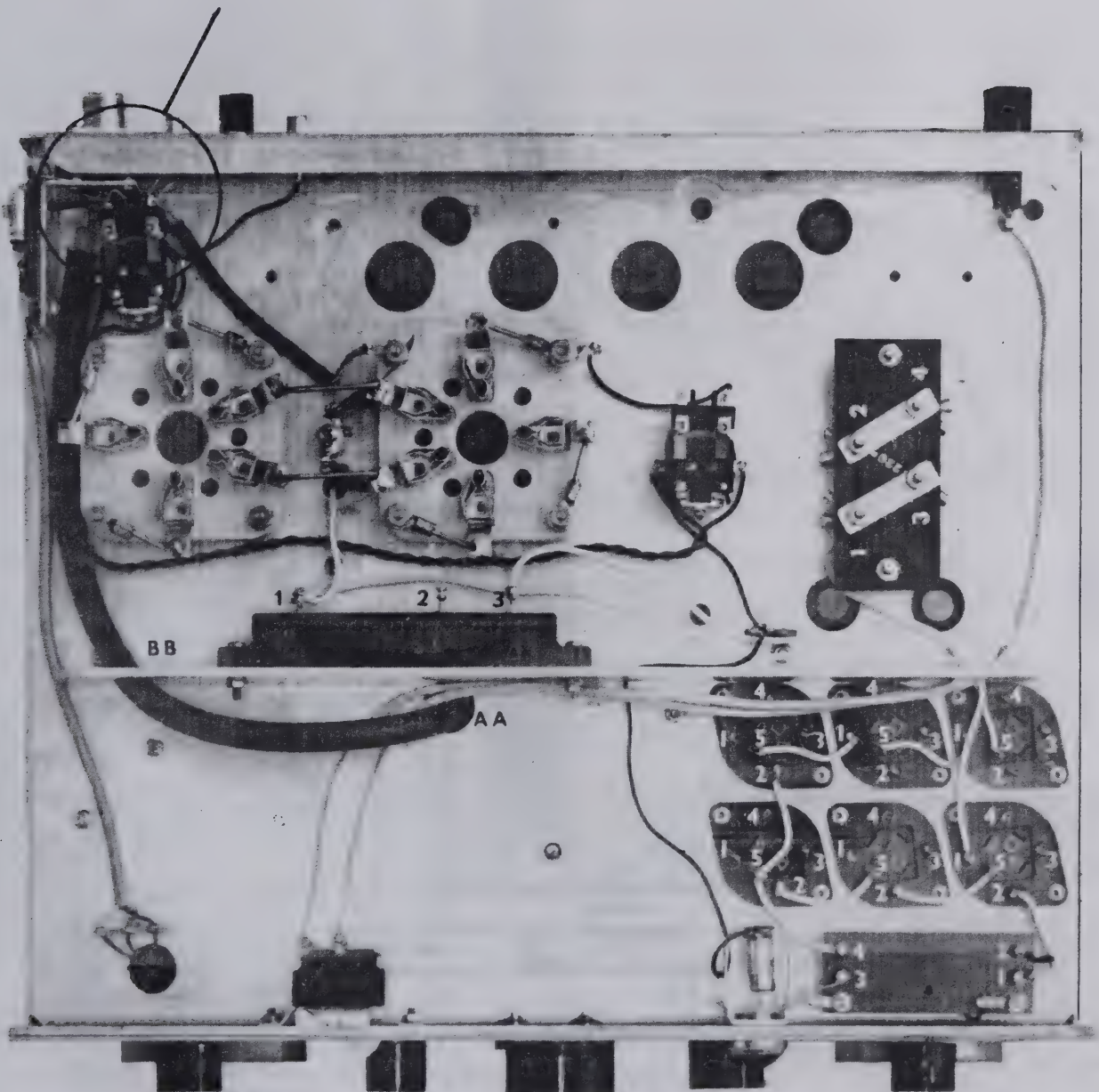
( ) The red high voltage wire.

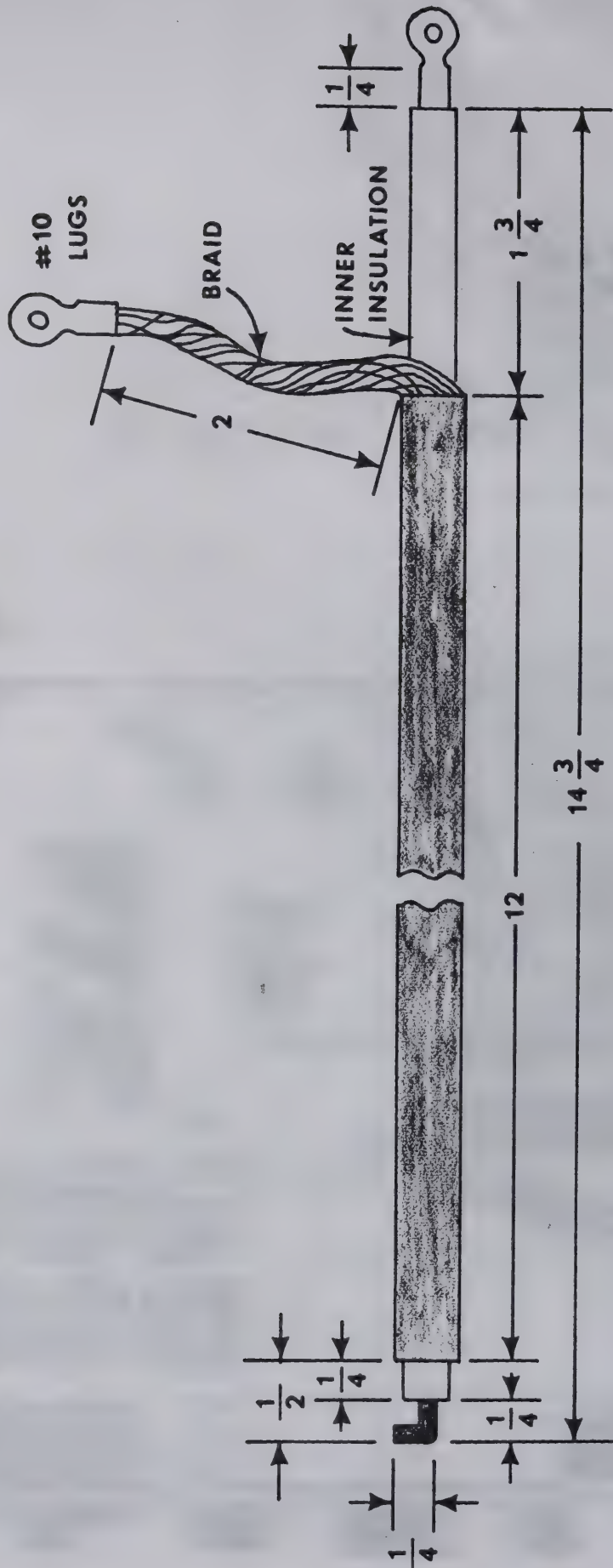
( ) The RG-213/U cable.





PICTORIAL 12

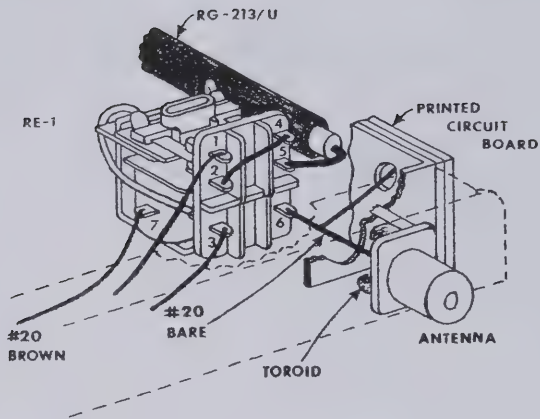




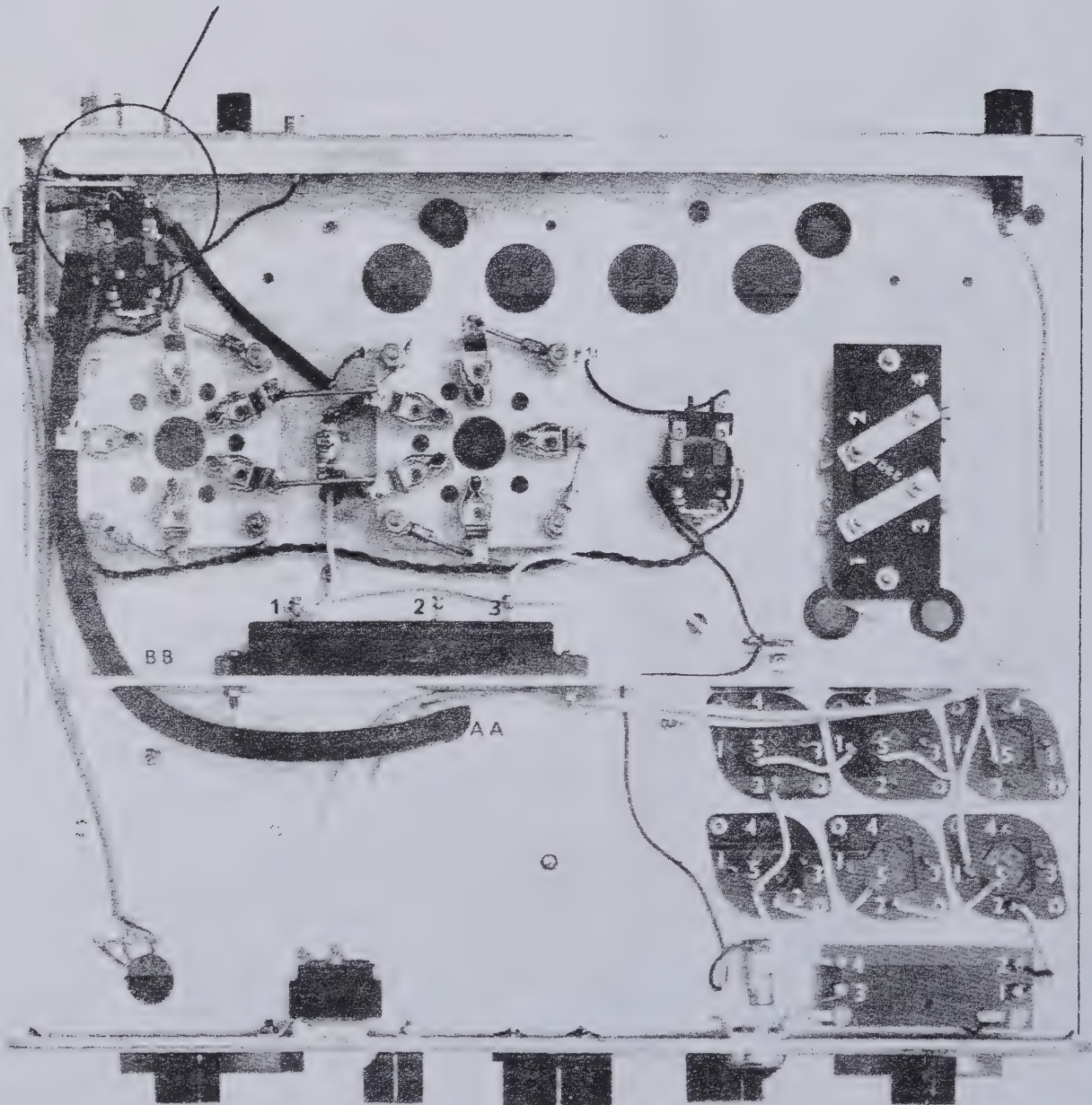
DETAIL 11

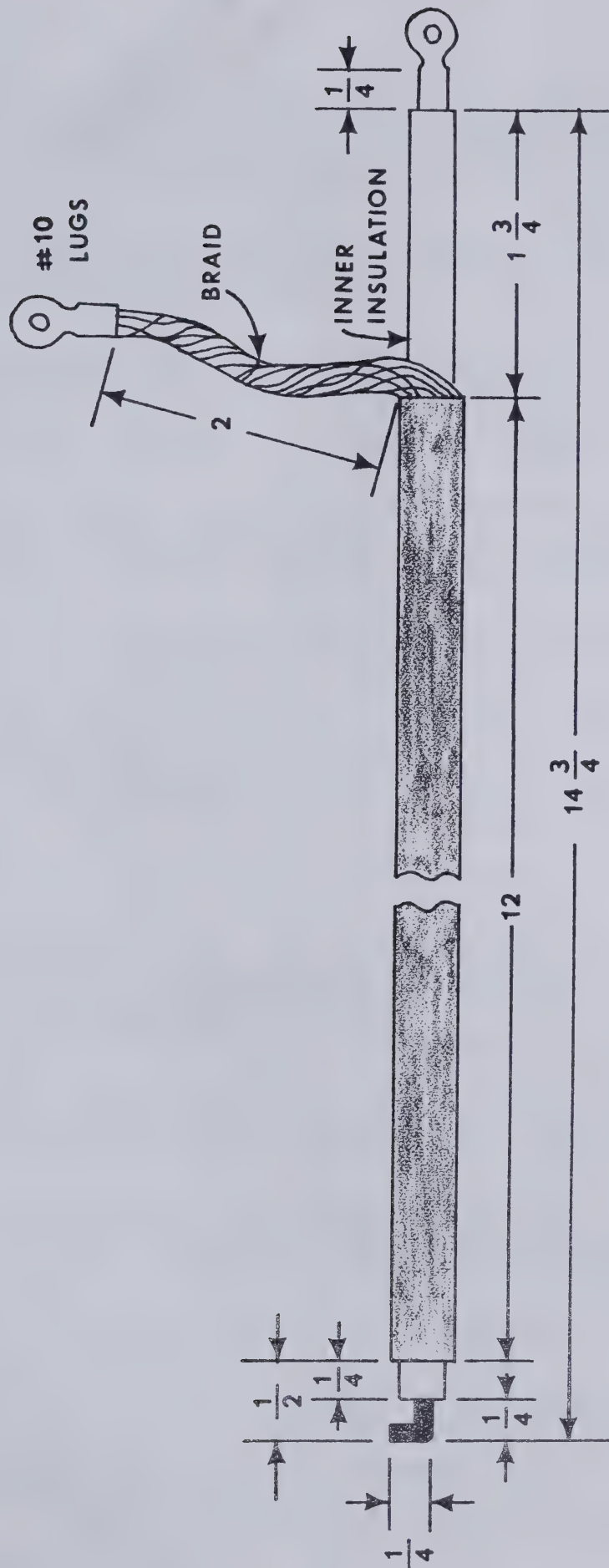
- Mount a 140 microfarad 475 volt DC capacitor at holes C-2, C-3, C-4, C-5, C-6 and C-7. Orient the center tab as shown in Pictorial 12. Give each of the mounting tabs a 1/4 turn twist to lock the capacitor securely in place.
- Locate the red high voltage wire. Cut 10 pieces to the following lengths:
  - ( ) 5 pieces 2 1/4" long.
  - ( ) 1 piece 2 1/2" long.
  - ( ) 1 piece 2 3/4" long.
  - ( ) 1 piece 4" long.
  - ( ) 1 piece 11" long.
  - ( ) 1 piece 12 1/2" long.
- Strip back all ends 1/4" and tin. Strip back one end of the 4" piece 1" and tin.
- Using a 2 1/4" piece connect one end to terminal 1 of capacitor C-2. Solder. Connect the other end to terminal 5 of capacitor C-3. No solder.
- Using another piece of the 2 1/4" length of red high voltage wire connect one end to terminal 1 of capacitor C-3. Solder. Connect the other end to terminal 5 of capacitor C-4. No solder.
- Using a third piece of 2 1/4" red high voltage wire connect one end to terminal 2 of capacitor C-4. Solder. Connect the other end to terminal 5 of capacitor C-5. No solder.
- Using the fourth piece of 2 1/4" red high voltage wire connect one end to terminal 2 of capacitor C-5. Solder. Connect the other end to terminal 5 of capacitor C-6. No solder.
- Connect the remaining 2 1/4" piece of red high voltage wire to terminal 2 of capacitor C-6. Solder. Connect the other end to terminal 5 of capacitor C-7. No solder.
- Connect one end of the 2 1/2" piece to terminal 5 of capacitor C-5. No solder. Connect the other end to terminal 4 of the high voltage terminal board. No solder.
- Connect one end of the 2 3/4" piece of high voltage wire to terminal 2 of capacitor C-7. Solder. Connect the other end to terminal 1 of the high voltage board. Solder 2.
- Connect one end of the 11" piece of high voltage wire to terminal 1 of capacitor C-7. Solder. Connect the other end to terminal 3 of the power diode. Solder.





PICTORIAL 12





DETAIL 11

— Connect one end of the 12 1/2" piece of high voltage wire to terminal 5 of capacitor C-2. No solder. Connect the other end to terminal 1 of the power diode. No solder.

— Using the 4" piece of high voltage wire connect the 1/4" end to terminal 1 of the power diode. Solder 2. Insert the end that is tinned 1" long through the grommet located at hole R on the main chassis.

— Refer to Detail 11 and prepare the RG-213/U cable in the following manner:

- ( ) Trim the cable to a length of 14 3/4".
- ( ) Strip back the outer insulation on one end to a length of 1".
- ( ) Carefully remove the shield for the entire 1" length.
- ( ) Strip back the center conductor a length of 1/2".
- ( ) Tin the entire length of center conductor.
- ( ) Bend the center conductor back 1/4" from the end.

— Prepare the other end in the following manner:

- ( ) Strip back the outer insulation outer jacket a length of 2".
- ( ) Carefully fan out the braid and twist into a pigtail.
- ( ) Solder a No. 6 barrel lug on the end of the pigtail.
- ( ) Trim back the center insulation 1/4" and tin.
- ( ) Solder a No. 6 barrel lug to the center conductor.

— Insert the end with the solder lugs attached through hole AA in the main chassis. Route the cable through hole BB in the reinforcing bar to Relay 1 as shown in Pictorial 12.

— Solder the center conductor to terminal 5 of Relay 1. See Inset on Pictorial 12. Be careful not to use too much heat as the center conductor insulation will melt.

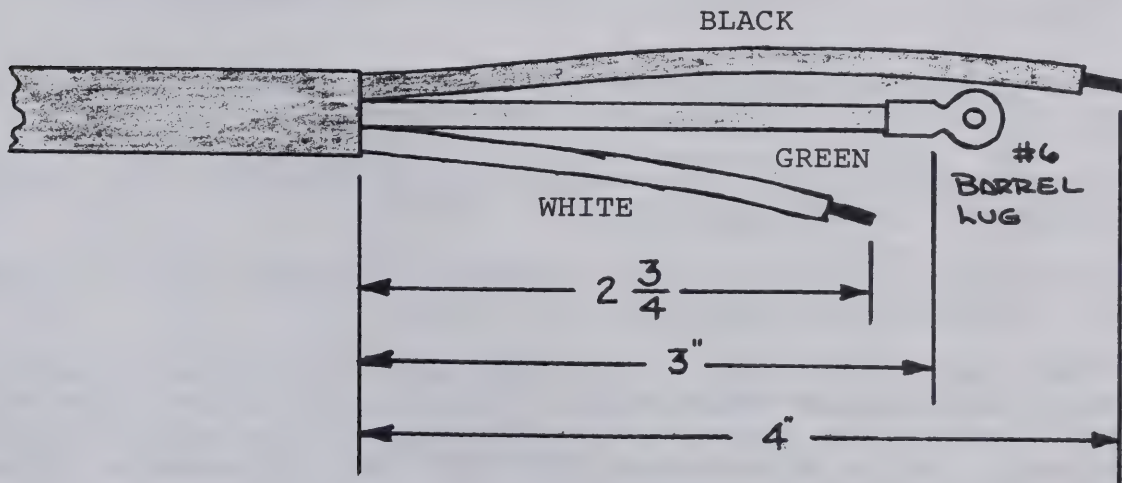
#### REFER TO PICTORIAL 13 FOR THE FOLLOWING STEPS

— Locate the following components:

- ( ) The 0.1 ohm shunt, Part No. 27 on the Parts Pictorial.
- ( ) The 1.5 meg ohm high voltage metering resistor.



- Connect the other .01 1KV capacitor to the solder lug mounted at terminal 2 of the bifilar choke. Solder. Connect the other end to the solder lug mounted at hole G. (Solder 2).
- Cut two pieces of No. 12 white wire to the following lengths:
  - ( ) One piece 4 3/4" long.
  - ( ) One piece 4 1/4" long.
- Strip back both ends of each piece 1/4" and tin.
- Insert one end of the 4 1/4" piece into terminal 4 of the bifilar choke. Solder. Connect the other end to the bus bar running between X2-pin 4 and X1-pin 3. Solder.
- Using the 4 3/4" piece insert one end into the solder lug mounted at terminal 3 of the bifilar choke. Solder. Connect the other end to the bus bar running between X2-pin 3 and X1-pin 4. Solder.
- Connect one end of the 0.1 ohm shunt to terminal 1 of the terminal board. Solder 3. Connect the other end to terminal 3. Solder 2.
- Connect one end of the 1.5 meg ohm high voltage resistor to terminal 2 of the terminal board. Solder 3. Connect the other end to terminal 4 of the terminal board. Solder 2.



DETAIL 13

- Refer to Detail 13 and prepare the line cord as follows:

- ( ) The 5 ohm, 10 watt NIT resistor.
- ( ) The 350 ohm, 10 watt NIT resistor.
- ( ) Two .01 1KV disc ceramic capacitors.
- ( ) The bifilar choke, Part No. 44 on the Parts Pictorial.
- ( ) 12 - 82K 2 watt resistors - (Gray, red, orange).
- ( ) The line cord.

— Connect one end of the 350 ohm 10 watt NIT resistor to the solder lug mounted at hole X2-2 on tube socket X-2. Solder 2. Connect the other end of the 350 ohm resistor to terminal 2 of Relay 2. No solder.

— Connect one end of the 5 ohm, 10 watt NIT resistor to the solder post. No solder. Connect the other end to terminal 5 of capacitor C-5. No solder.

— Refer to Detail 12 and prepare 6 pair of 2 each 82 kilohm resistors, as shown.

— Refer to Pictorial 13 and connect one pair of resistors from terminal 3 on capacitor C-2, Solder, to terminal 5 on capacitor C-2. Solder 2.

— Connect another pair from terminal 3 on capacitor C-3, (Solder), to terminal 5 on capacitor C-3. Solder 2.

— Connect one end of another pair of resistors to terminal 3 on capacitor C-4, (Solder), to terminal 5 of capacitor C-4. Solder 2.

— Connect another pair from terminal 3 of capacitor C-5, (Solder 2), to terminal 5 of capacitor C-5. Solder 4.

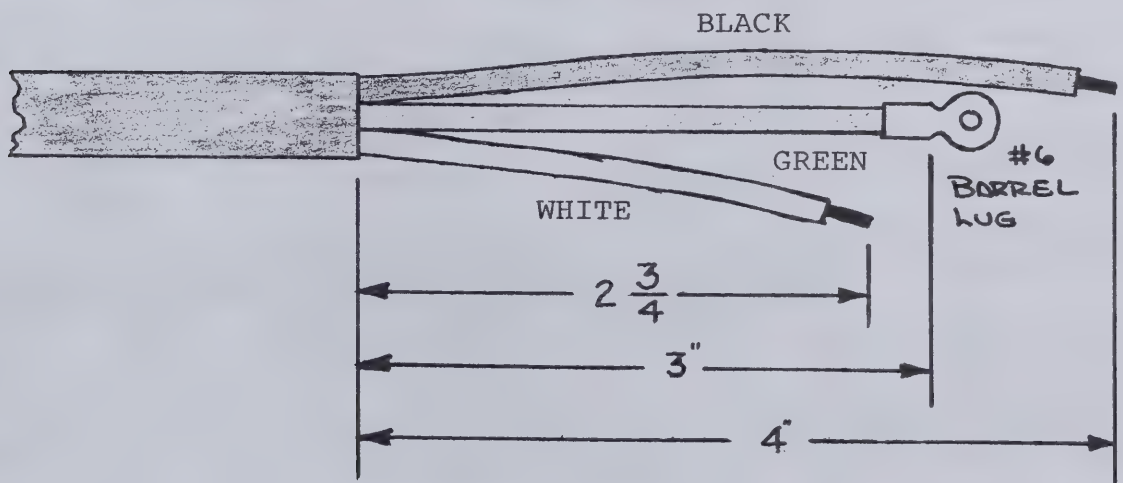
— Connect another pair from terminal 3 on capacitor C-6, (Solder), to terminal 5 on capacitor C-6. Solder 2.

— Connect the last pair from terminal 3 of capacitor C-7, (Solder) to terminal 5 of capacitor C-7. Solder 2.

— Mount the bifilar choke at holes G and L on the main chassis. Mount the bifilar choke spacer, Part No. 48 on the Parts Pictorial, between the choke and the chassis. Fasten with 6-32 x 1/2" screws. Secure with 6-32 x 1/4" nuts and lockwashers. Mount a No. 6 flat solder lug beneath the nut at hole G.

— Connect one end of a .01 1KV disc ceramic capacitor to the solder lug mounted at terminal 1 of the bifilar choke. Solder. Connect the other end of this capacitor to the ground lug just installed at hole G. No solder.

- Connect the other .01 1KV capacitor to the solder lug mounted at terminal 2 of the bifilar choke. Solder. Connect the other end to the solder lug mounted at hole G. (Solder 2).
- Cut two pieces of No. 12 white wire to the following lengths:
  - ( ) One piece 4 3/4" long.
  - ( ) One piece 4 1/4" long.
- Strip back both ends of each piece 1/4" and tin.
- Insert one end of the 4 1/4" piece into terminal 4 of the bifilar choke. Solder. Connect the other end to the bus bar running between X2-pin 4 and X1-pin 3. Solder.
- Using the 4 3/4" piece insert one end into the solder lug mounted at terminal 3 of the bifilar choke. Solder. Connect the other end to the bus bar running between X2-pin 3 and X1-pin 4. Solder.
- Connect one end of the 0.1 ohm shunt to terminal 1 of the terminal board. Solder 3. Connect the other end to terminal 3. Solder 2.
- Connect one end of the 1.5 meg ohm high voltage resistor to terminal 2 of the terminal board. Solder 3. Connect the other end to terminal 4 of the terminal board. Solder 2.



DETAIL 13

- Refer to Detail 13 and prepare the line cord as follows:



- ( ) The 5 ohm, 10 watt NIT resistor.
- ( ) The 350 ohm, 10 watt NIT resistor.
- ( ) Two .01 1KV disc ceramic capacitors.
- ( ) The bifilar choke, Part No. 44 on the Parts Pictorial.
- ( ) 12 - 82K 2 watt resistors - (Gray, red, orange).
- ( ) The line cord.

— Connect one end of the 350 ohm 10 watt NIT resistor to the solder lug mounted at hole X2-2 on tube socket X-2. Solder 2. Connect the other end of the 350 ohm resistor to terminal 2 of Relay 2. No solder.

— Connect one end of the 5 ohm, 10 watt NIT resistor to the solder post. No solder. Connect the other end to terminal 5 of capacitor C-5. No solder.

— Refer to Detail 12 and prepare 6 pair of 2 each 82 kilohm resistors, as shown.

— Refer to Pictorial 13 and connect one pair of resistors from terminal 3 on capacitor C-2, Solder, to terminal 5 on capacitor C-2. Solder 2.

— Connect another pair from terminal 3 on capacitor C-3, (Solder), to terminal 5 on capacitor C-3. Solder 2.

— Connect one end of another pair of resistors to terminal 3 on capacitor C-4, (Solder), to terminal 5 of capacitor C-4. Solder 2.

— Connect another pair from terminal 3 of capacitor C-5, (Solder 2), to terminal 5 of capacitor C-5. Solder 4.

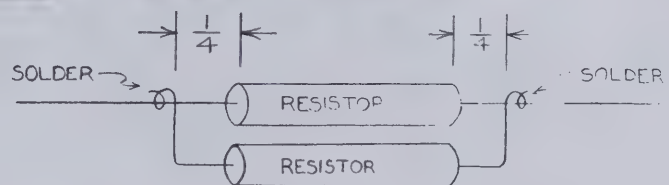
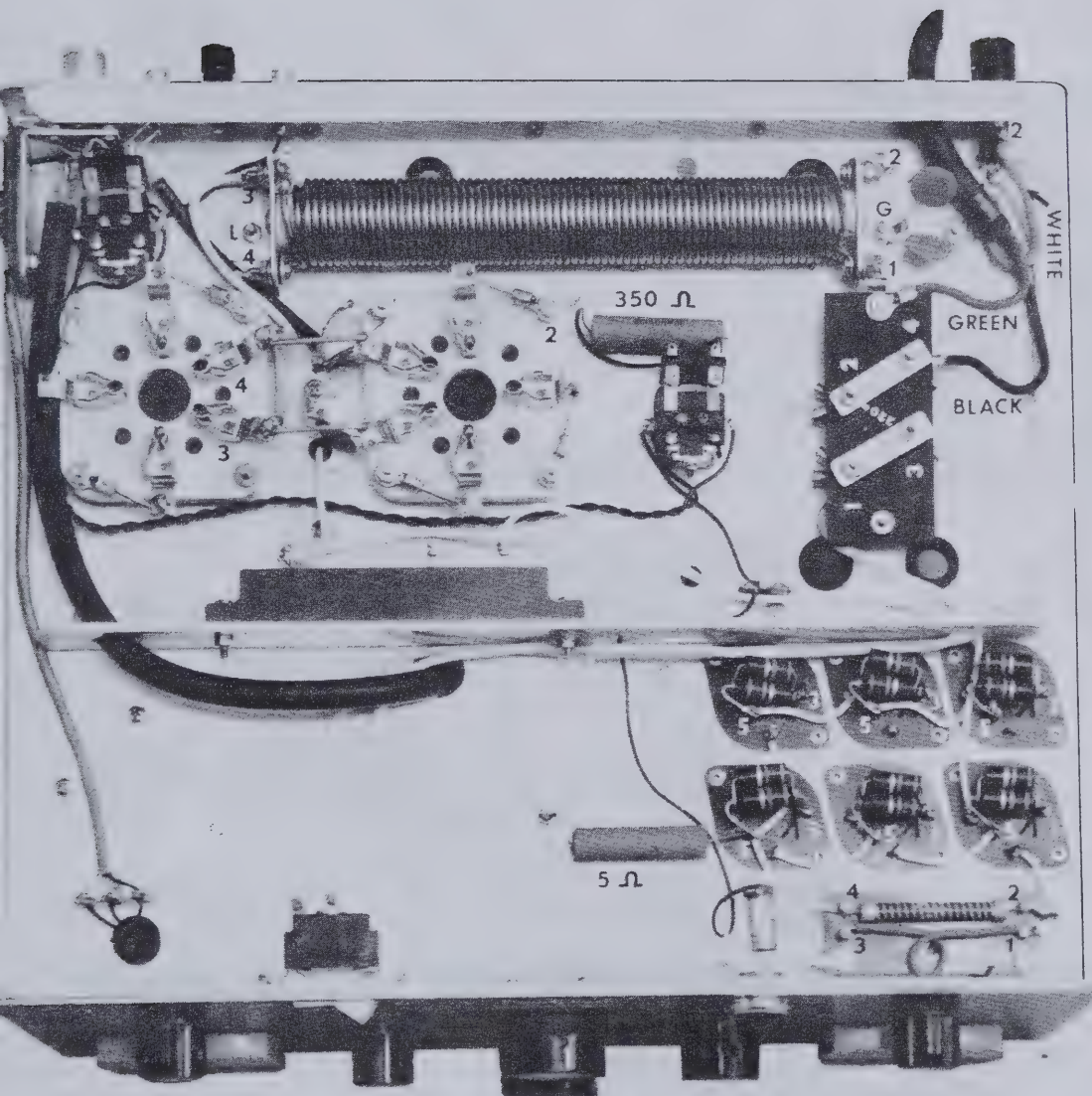
— Connect another pair from terminal 3 on capacitor C-6, (Solder), to terminal 5 on capacitor C-6. Solder 2.

— Connect the last pair from terminal 3 of capacitor C-7, (Solder), to terminal 5 of capacitor C-7. Solder 2.

— Mount the bifilar choke at holes G and L on the main chassis. Mount the bifilar choke spacer, Part No. 48 on the Parts Pictorial, between the choke and the chassis. Fasten with 6-32 x 1/2" screws. Secure with 6-32 x 1/4" nuts and lockwashers. Mount a No. 6 flat solder lug beneath the nut at hole G.

— Connect one end of a .01 1KV disc ceramic capacitor to the solder lug mounted at terminal 1 of the bifilar choke. Solder. Connect the other end of this capacitor to the ground lug just installed at hole G. No solder.

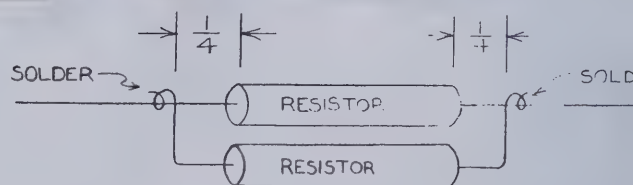
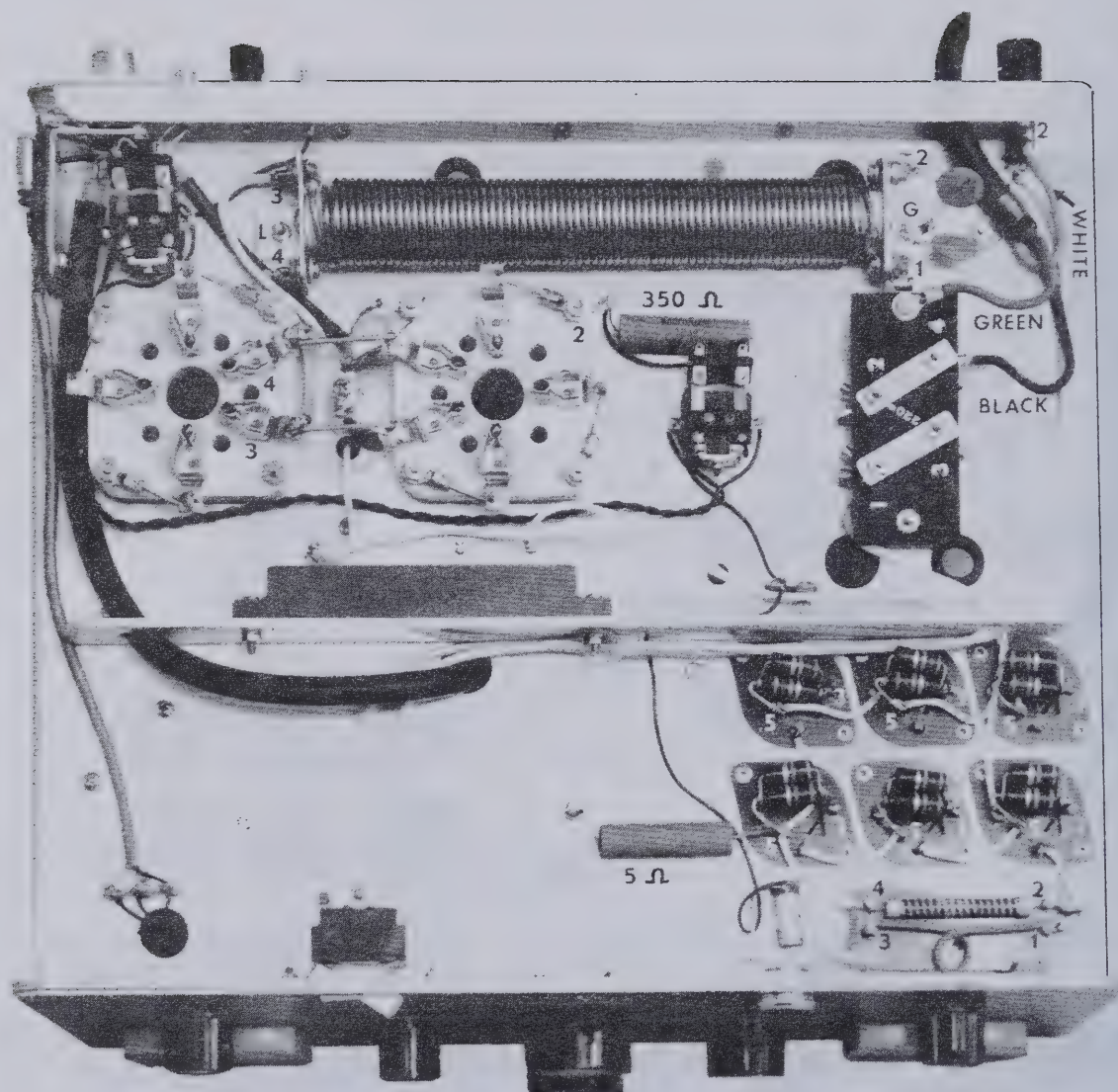
PICTORIAL 13



DETAIL 12



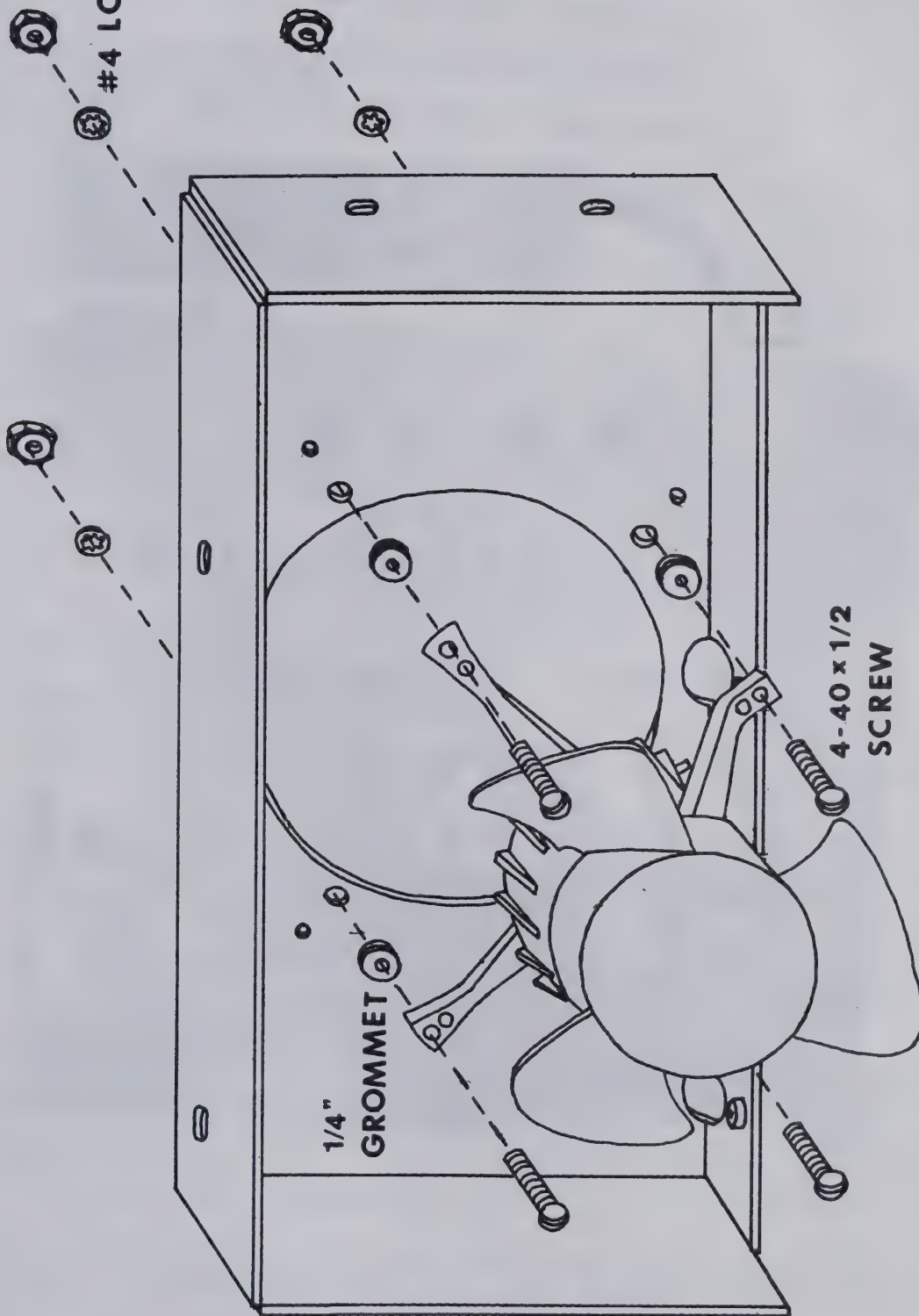
PICTORIAL 13



DETAIL 12

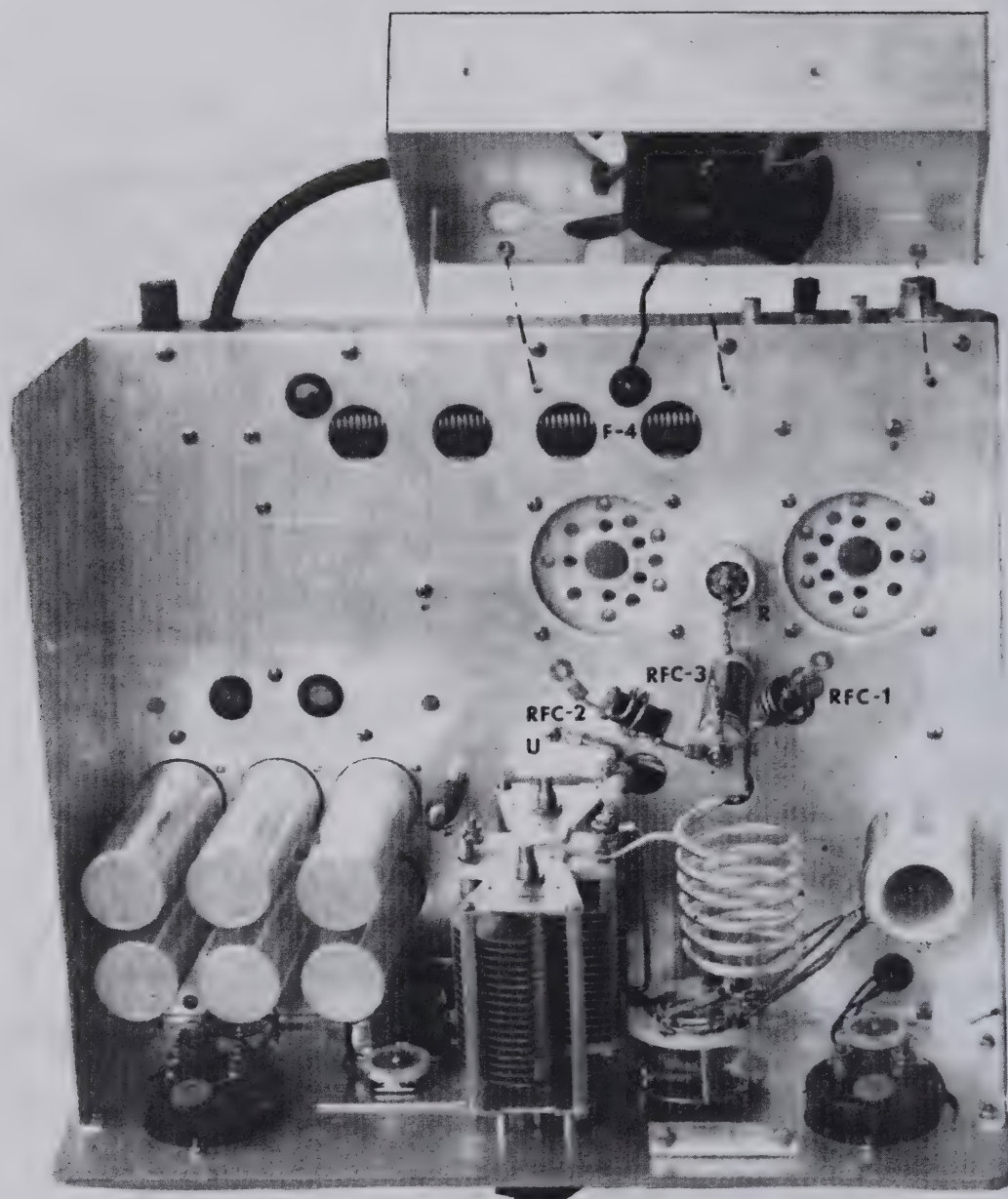


4-40x1/4 NUT  
#4 LOCKWASHER



DETAIL 14

PICTORIAL 14



37  
2  
3  
4  
( ) Strip back the outer jacket 4".

( ) Trim the white lead to a length of 2 3/4".

( ) Trim the green lead to a length of 3".

( ) Strip back all leads 1/4" and tin.

— Solder a No. 6 barrel lug on the green lead.

— Thread the line cord through the grommet installed at hole B on the rear chassis support bar. Slide a 3/8" cable clamp over the line cord on the chassis side. Fasten at hole F on the main chassis, using a 6-32 x 3/8" screw. Use a No. 6 flat washer between the cable clamp and a 6-32 x 5/16" nut.

— Route the black wire to terminal 4 of the changeover board. Solder to a No. 10 lug mounted there. Connect the white wire to terminal 2 of the fuse holder. Solder.

— Ground the green wire at the stud holding the changeover board to the chassis. Use a 6-32 x 5/16 nut and lockwasher.

#### REFER TO PICTORIAL 14 FOR THE FOLLOWING STEPS

— Orient the chassis as shown in Pictorial 14.

— Connect the center conductor of the RG-213/U to terminal C-1 of the loading capacitor, E. F. Johnson type 154-40. Secure with a 6-32 x 5/16" nut.

— Connect the braid to hole U on the main chassis. Use a 6-32 x 1/4" screw. Use a lockwasher beneath the head of the screw.

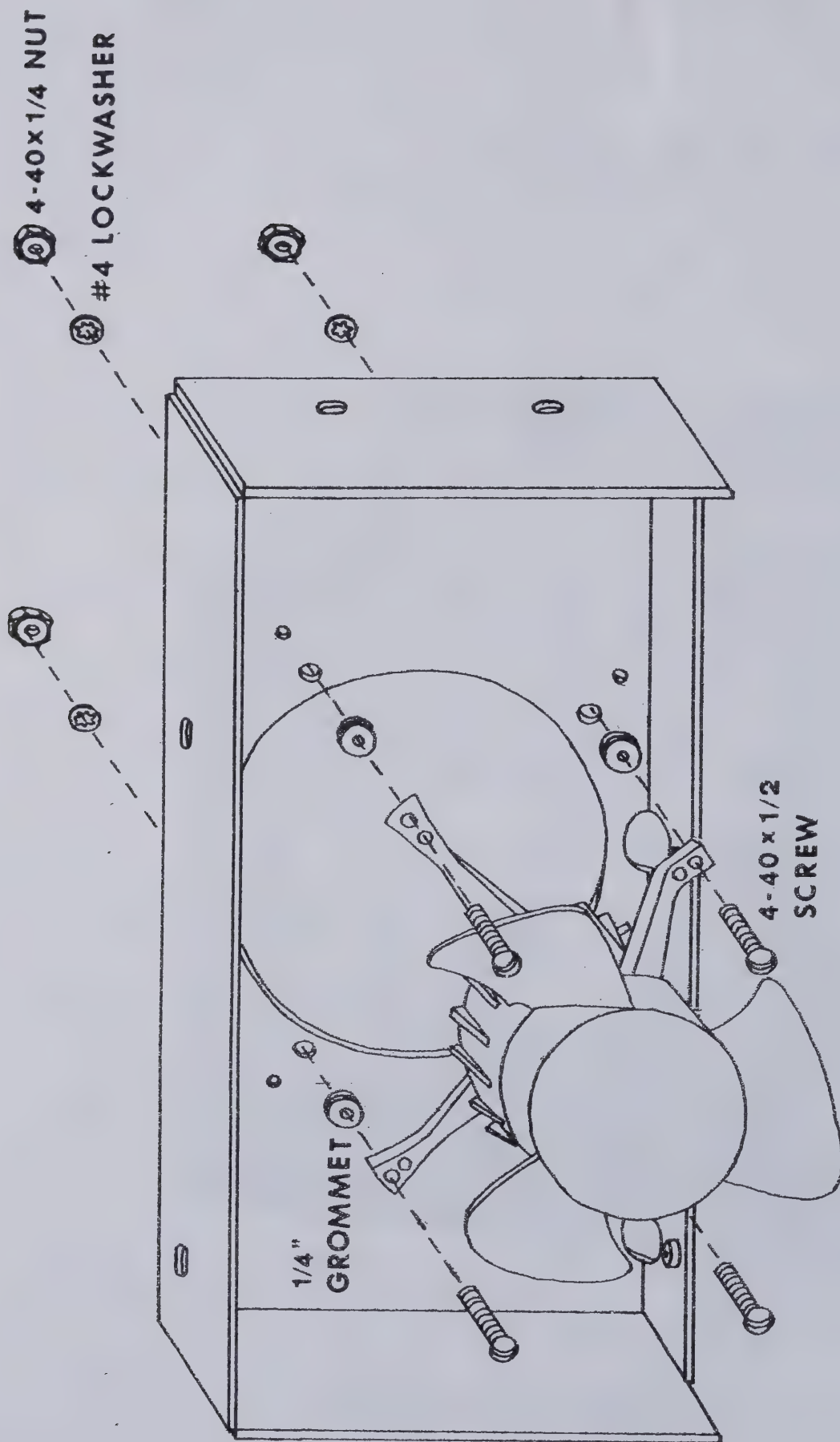
— Locate the red high voltage wire coming from grommet hole R. Connect to the lower terminal of the Antran choke and to the No. 6 solder lug mounted on top of the 1000 micro-micro-farad capacitor. Solder both connections.

— Refer to Detail 14 and mount the fan in the fan shroud.

— Mount four 1/4" grommets in holes A, B, C and D on the fan mounting bracket. Mount the Rotron fan on the grommets as illustrated in Detail 14. Fasten with 4-40 x 1/2" screws. Use 4-40 x 1/4" nuts and lockwashers.

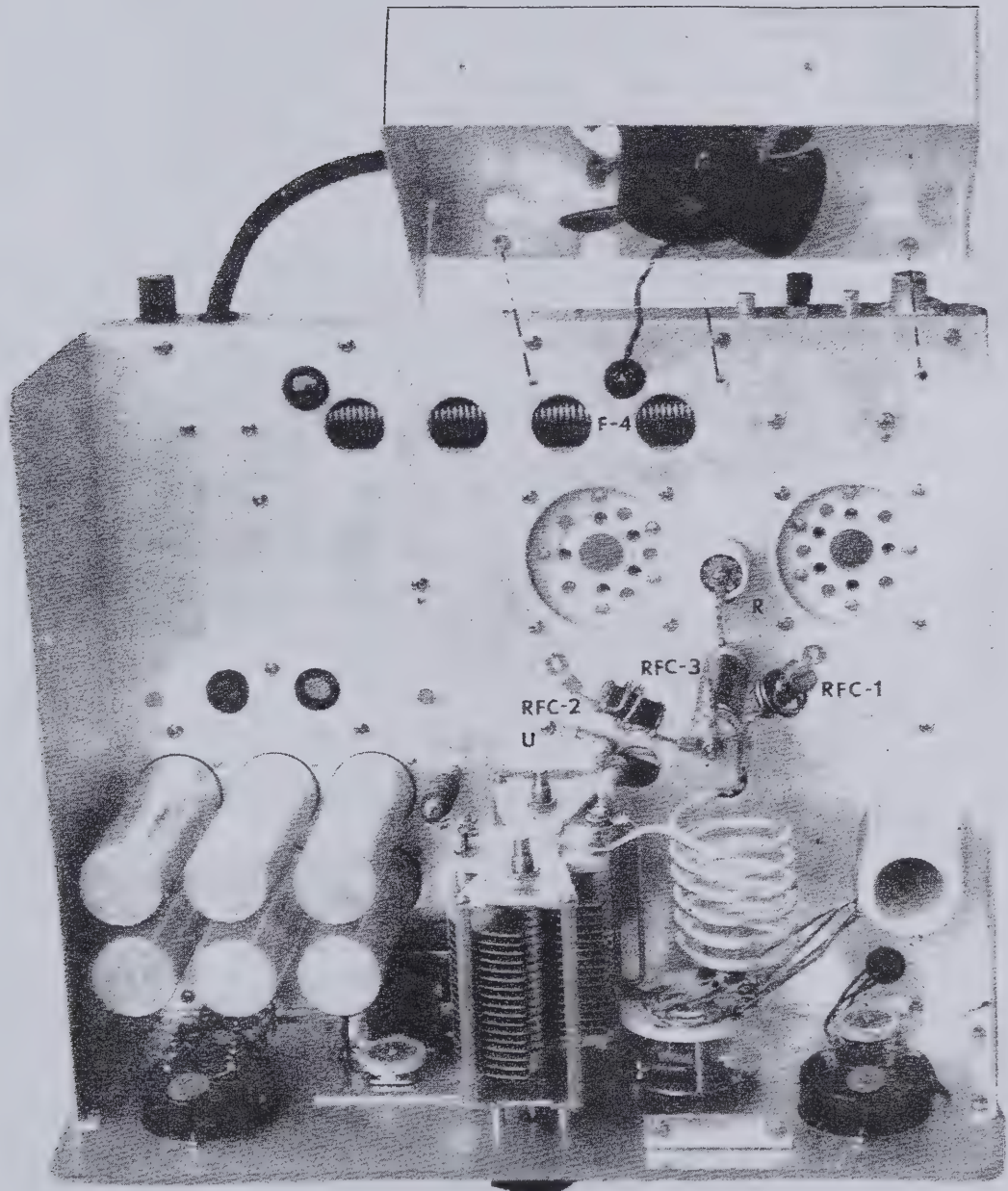
— Cut a piece of No. 20 brown and black hookup wire to a length of 19". Strip back both ends 1/4" and tin.





DETAIL 14

## PICTORIAL 14







— Twist the brown and black hookup wire together throughout its full length. Connect the brown hookup wire to terminal 1 of the fan. Solder. Connect the black hookup wire to terminal 2 of the fan. Solder.

— Mount the fan and fan mounting bracket on the main chassis as shown in Pictorial 14. Route the brown and black twisted pair through the chassis at hole F-4. Secure the fan mounting bracket to the bottom of the chassis with 6-32 x 1/4" screws. Use lockwashers beneath the head of the screws. Secure the bracket to the chassis side with 6-32 x 3/8" screws. Fasten with 6-32 x 1/4" nuts. Use lockwashers beneath the nuts. Position the brown and black twisted pair so that the wire does not interfere with the rotation of the fan.

— Mount the two suppressor networks, RFC-1 and RFC-2 to the stud mounted on top of the Antran choke. Orient the suppressors as shown in Pictorial 14. Fasten with a 6-32 x 5/16" nut.

#### REFER TO PICTORIAL 15 FOR THE FOLLOWING STEPS

— Position the chassis as shown in Pictorial 15.

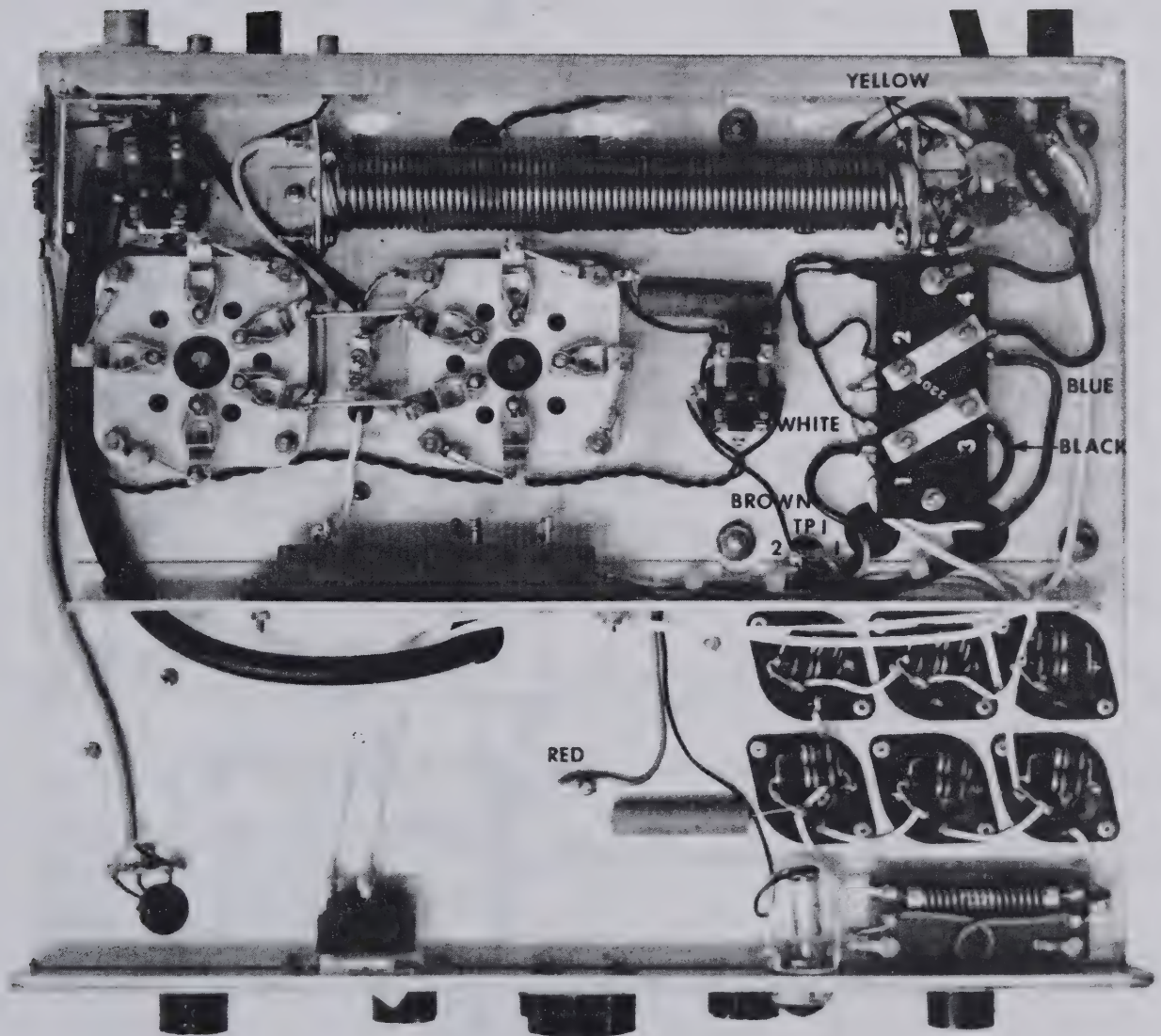
— Locate the brown and black twisted pair coming from the fan. Connect the brown wire to a #6 lug mounted at terminal 2 of the voltage changeover board. Solder. Connect the black wire to a #6 lug mounted at terminal 1 of the voltage changeover board. Solder. Route the cable as shown in Pictorial 14.

— Locate the power transformer and trim the leads as follows:

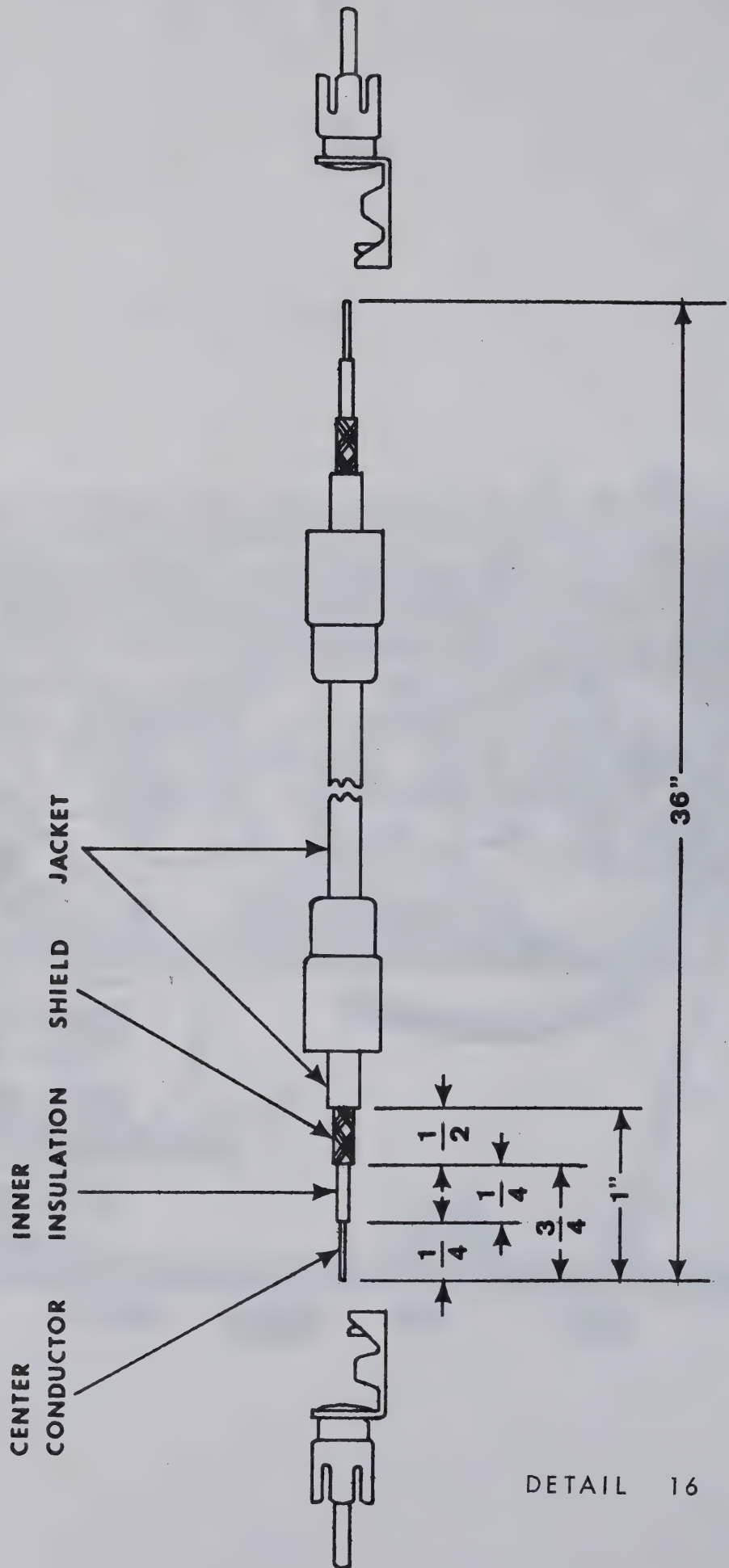
- ( ) White - 9 1/2".
- ( ) Blue - 9".
- ( ) Violet - 9".
- ( ) Violet - 9".
- ( ) Black - 11".
- ( ) Brown - 8 1/2".
- ( ) Red - 13".
- ( ) Red and Yellow - 12 1/2".
- ( ) Green - 10".
- ( ) Yellow - 11 1/2".
- ( ) Yellow - 8".



## PICTORIAL 15







DETAIL 16

- \_\_\_ Remove the 1/4"-20 nuts mounted on the transformer.
- \_\_\_ Place the transformer on your work surface with the studs up.  
\_\_\_ Guide the chassis onto the transformer.
- \_\_\_ Route the yellow wires through grommet hole G-3.
- \_\_\_ Route the red and yellow, red, brown, white and green wires through grommet hole G-5.
- \_\_\_ Route the blue, black and the two violet wires through grommet hole G-4. Fasten transformer with 1/4"-20 nuts and washers.
- \_\_\_ Connect the red and yellow wire to terminal 2 on the power diode.  
\_\_\_ Solder.
- \_\_\_ Connect one purple wire to TP1-2. No solder.
- \_\_\_ Connect the other purple wire to TP1-1. No solder.
- \_\_\_ Connect the black wire to the #10 lug mounted at terminal 3 of the voltage changeover board. Solder.
- \_\_\_ Connect the brown wire to a #10 lug mounted at terminal 1 of the voltage changeover board.
- \_\_\_ Connect the white wire to a #10 lug mounted at terminal 2 of the voltage changeover board. Solder.
- \_\_\_ Connect the blue wire to a #10 lug mounted at terminal 4 of the voltage changeover board. Solder.
- \_\_\_ Route the green wire coming from the grommet hole G-5 to terminal 2 of Relay 2. Solder 2.
- \_\_\_ Connect the yellow wire from grommet hole G-3 to the solder lug mounted at terminal 1 of the bifilar choke. Solder.
- \_\_\_ Connect the other yellow wire to the solder lug mounted at terminal 2 of the bifilar choke.
- \_\_\_ Connect the red wire coming from grommet hole G-5 to the solder post. Solder 2.
- \_\_\_ Connect one end of the .001 1 KV ceramic disc capacitor to TP1-1.  
\_\_\_ Solder 2. Connect the other end to TP1-2. Solder 4.

— Twist the brown and black hookup wire together throughout its full length. Connect the brown hookup wire to terminal 1 of the fan. Solder. Connect the black hookup wire to terminal 2 of the fan. Solder.

— Mount the fan and fan mounting bracket on the main chassis as shown in Pictorial 14. Route the brown and black twisted pair through the chassis at hole F-4. Secure the fan mounting bracket to the bottom of the chassis with 6-32 x 1/4" screws. Use lockwashers beneath the head of the screws. Secure the bracket to the chassis side with 6-32 x 3/8" screws. Fasten with 6-32 x 1/4" nuts. Use lockwashers beneath the nuts. Position the brown and black twisted pair so that the wire does not interfere with the rotation of the fan.

— Mount the two suppressor networks, RFC-1 and RFC-2 to the stud mounted on top of the Antran choke. Orient the suppressors as shown in Pictorial 14. Fasten with a 6-32 x 5/16" nut.

#### REFER TO PICTORIAL 15 FOR THE FOLLOWING STEPS

— Position the chassis as shown in Pictorial 15.

— Locate the brown and black twisted pair coming from the fan. Connect the brown wire to a #6 lug mounted at terminal 2 of the voltage changeover board. Solder. Connect the black wire to a #6 lug mounted at terminal 1 of the voltage changeover board. Solder. Route the cable as shown in Pictorial 14.

— Locate the power transformer and trim the leads as follows:

( ) White - 9 1/2".

( ) Blue - 9".

( ) Violet - 9".

( ) Violet - 9".

( ) Black - 11".

( ) Brown - 8 1/2".

( ) Red - 13".

( ) Red and Yellow - 12 1/2".

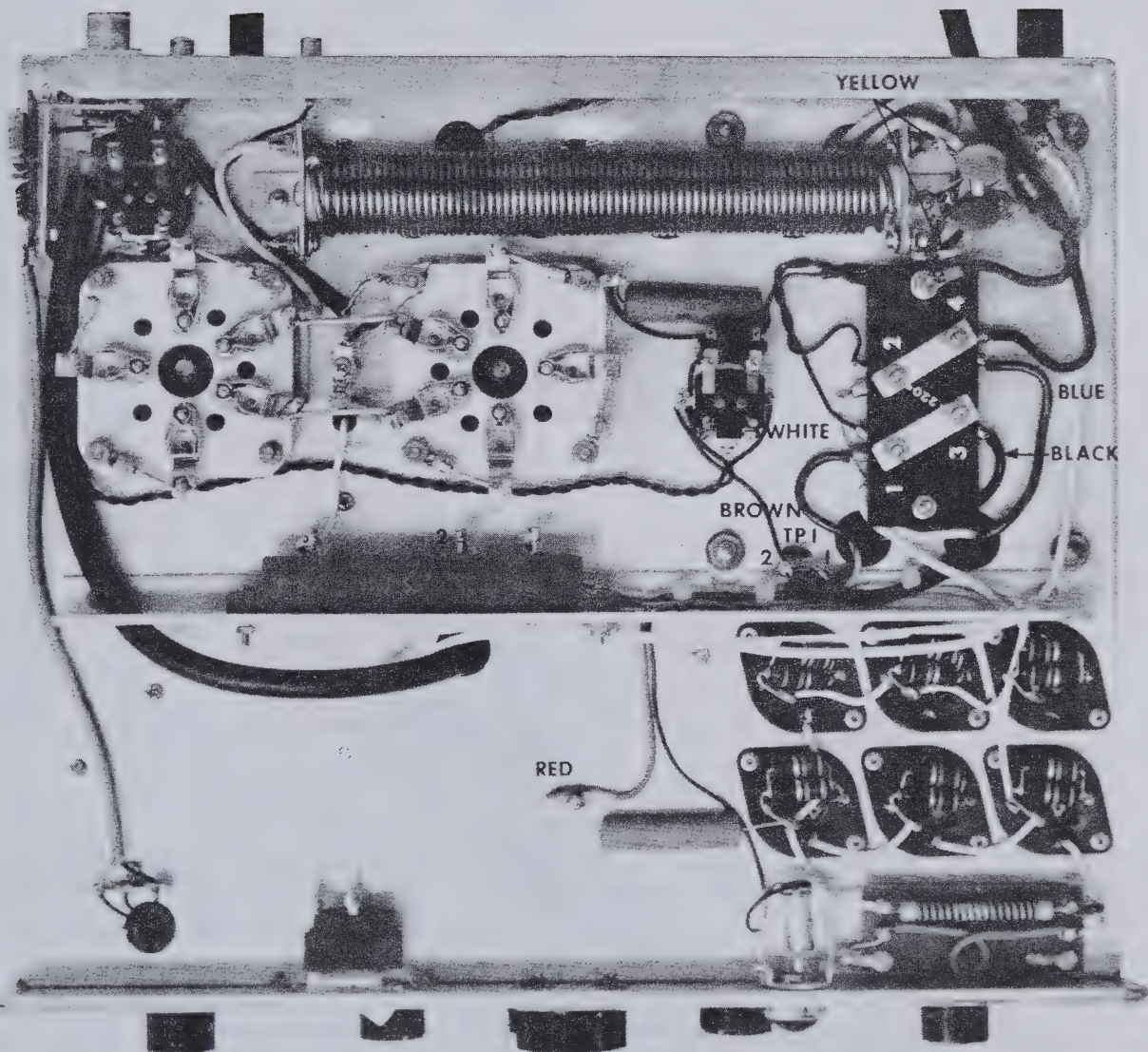
( ) Green - 10".

( ) Yellow - 11 1/2".

( ) Yellow - 8".



## PICTORIAL 15

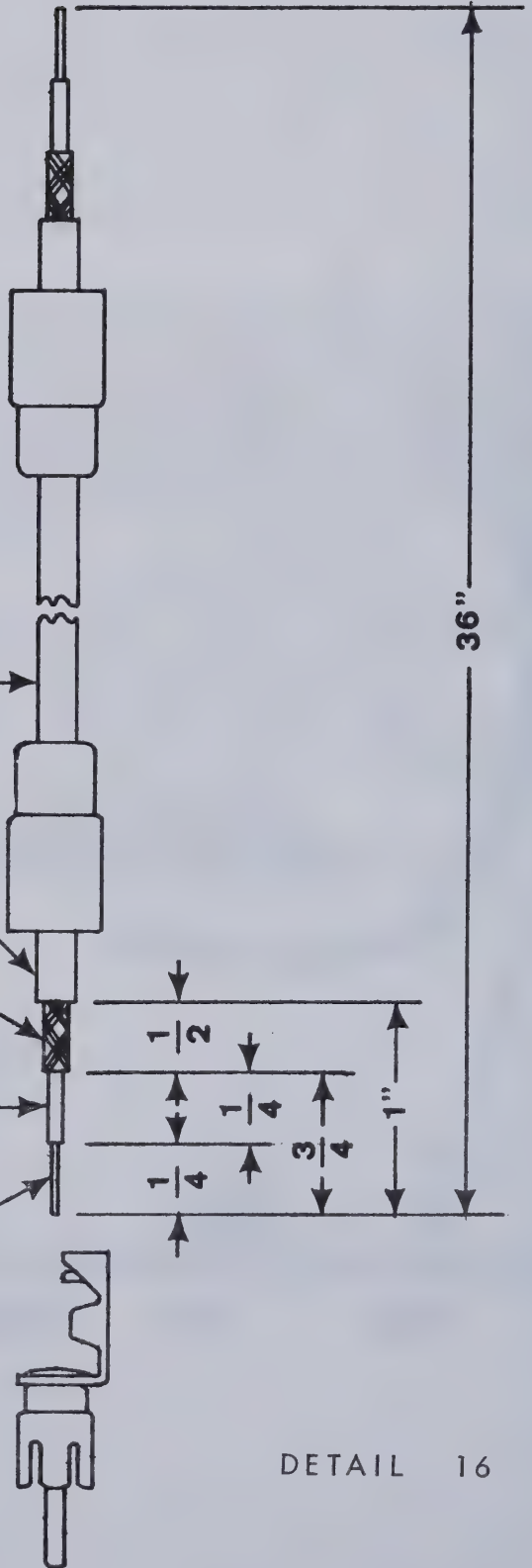


CENTER  
CONDUCTOR

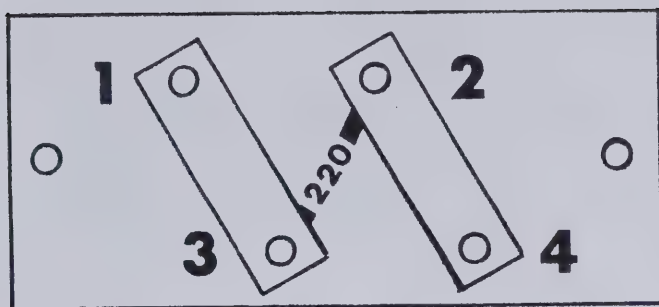
INNER  
INSULATION

SHIELD

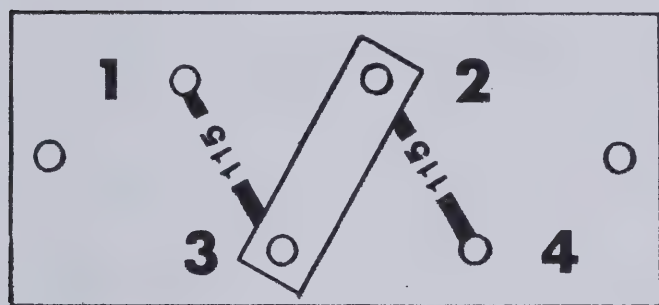
JACKET



DETAIL 16



110 VOLT OPERATION



220 VOLT OPERATION

DETAIL 15

Install the line cap on the line cord. The green wire always goes to ground. Connect the voltage changeover links for your voltage as shown in Detail 15. Fasten with the acorn nuts, Part No. 30 on the Parts Pictorial.

If you wish to operate your Bandit on 220 volts AC it will be necessary for you to procure a matching plug for your 220 volt receptacle.

Refer to Detail 16 and make up two interconnecting cables from RG-58A/U and the four phono plugs provided.

THIS COMPLETES THE ASSEMBLY OF YOUR BANDIT.  
WE ARE NOW READY FOR THE TESTING PHASE.





## SECTION VII - TESTS AND ADJUSTMENTS

THE BANDIT 2000C IS A HIGH POWER DEVICE AND VERY SERIOUS DAMAGE CAN RESULT FROM A SMALL WIRING ERROR. CHECK YOUR WIRING AGAINST THE SCHEMATIC PROVIDED. IT IS BEST IF YOU USE A RED PENCIL TO MARK THE SCHEMATIC AS YOU WIRE CHECK. IF YOU CAN GET A FRIEND TO CHECK AFTER YOU, CHANCES FOR ERROR ARE REDUCED.

The Bandit is now ready for initial tests and adjustments. Before applying power you must do the following things:

1. Insert the tubes in their sockets. Mount the plate caps. Connect the suppressors to the plate caps. Use 6-32 x 1/4" screws and lockwashers.
2. Check the fan blades for proper rotation. There must be no drag on the fan.
3. Install the high voltage cover. Use 6-32 x 1/4" screws and lockwashers.
4. Install the proper fuse in the fuseholder. 15 amperes for 230 VAC operation; 20 amperes for 115 VAC operation.
5. Place the plate meter switch in the Ip position.
6. Place the wattmeter switch in the 2000 position.
7. ARE YOU ABSOLUTELY SURE YOU HAVE WIRED YOUR BANDIT CORRECTLY?
8. KEEP CLEAR OF ALL HIGH VOLTAGE.
9. Put the band switch in the 80 meter position. Put the loading and antenna tuning capacitors to the 0 position. Place the auxiliary antenna loading switch in the "1" position.

Plug the unit into your power source and turn on the power switch. The plate current should read 15 ma  $\pm 10\%$ . Switch the plate switch to the Ep position. The plate voltage should read 2700 volts  $\pm 10\%$ .

If the above checks are satisfactory, turn the power switch to OFF and disconnect the power plug.

Short out the power supply. Use a long screwdriver to short out the plate caps of the tubes. Hold the screwdriver for approximately 30 seconds against the plate caps.

Locate the four gray vinyl feet and the two large black feet.

Fasten two gray vinyl feet to the rear of the case with 6-32 x 1/2" screws with no lockwasher.

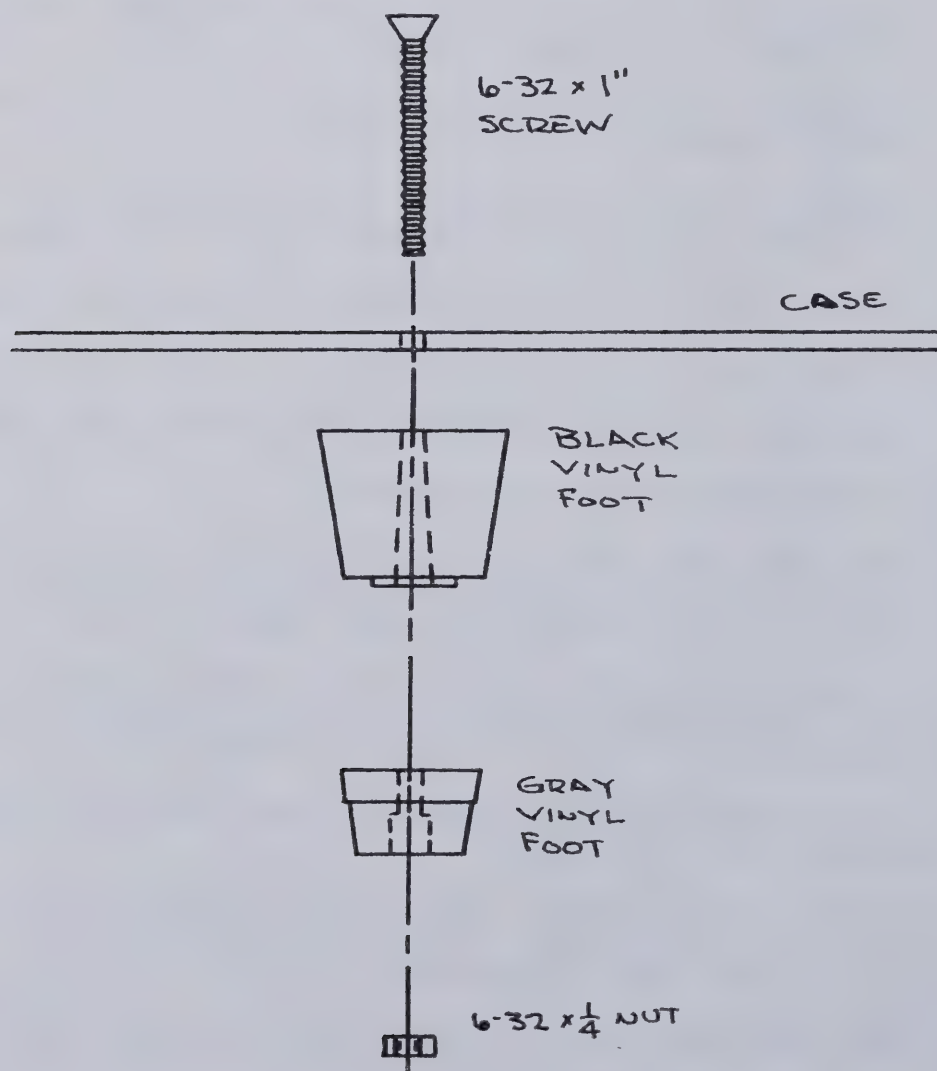
Locate a 6-32 x 1" flathead screw and a 6-32 x 1/4" nut.

Push a 6-32 x 1/4" nut into the gray vinyl foot. Place the 6-32 x 1" screw in the hole in the rim of the case indicated in Detail 17. Place the large black foot next to the case and put the gray vinyl foot on to that. Tighten the screw.

Repeat the procedure for the other foot.

Place the chassis on its front panel. Use a soft cloth between the front panel and your working surface. Thread the line cord and plug through the lefthand square opening. Lower the case on the chassis. Take care so that you do not scratch the rim.

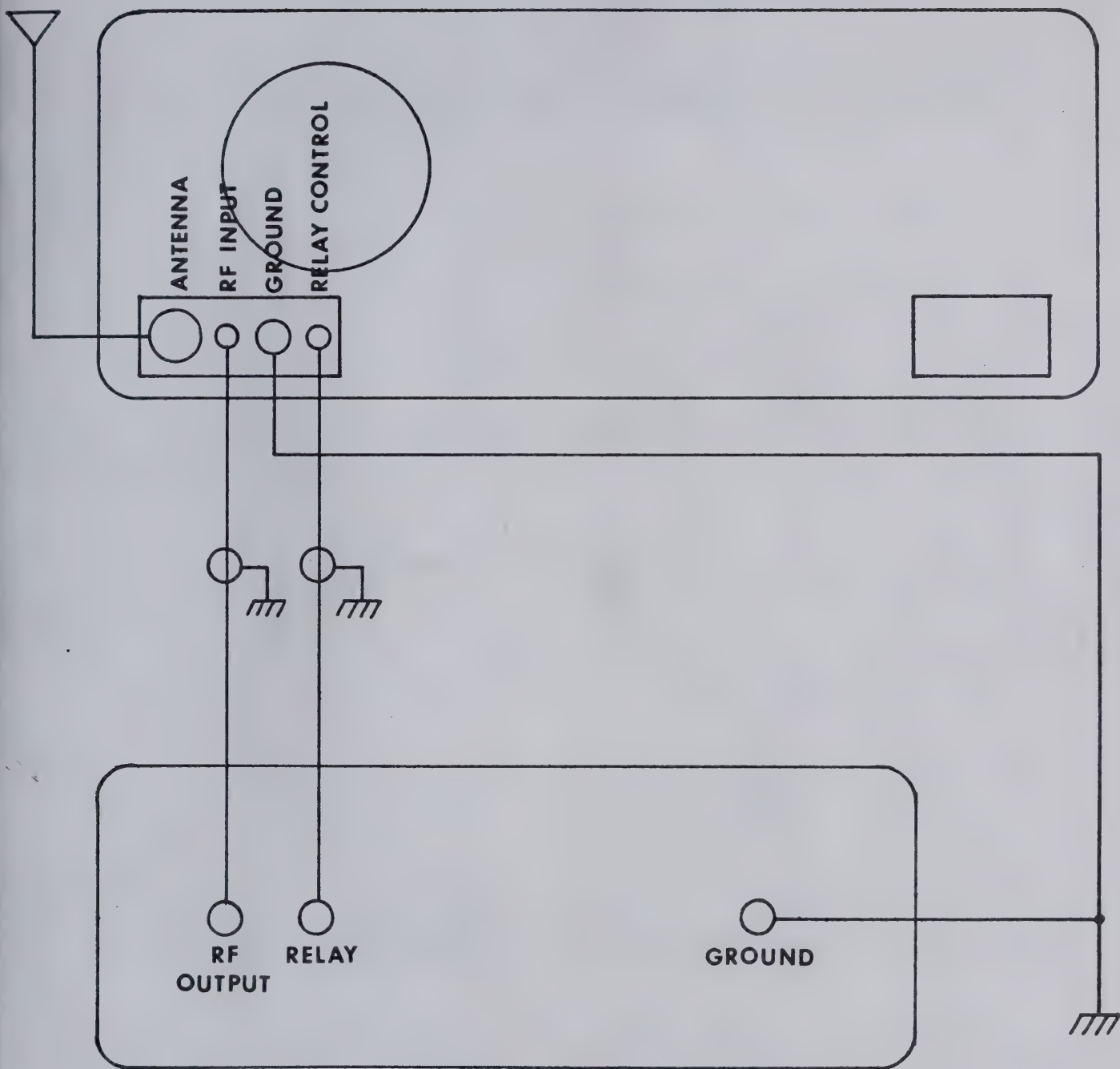
Fasten the case to the chassis with a 10-32 x 1/2" screw. Use the 7/16 washer beneath the screw.



DETAIL 17



# BANDIT 2000 C



EXCITER

DETAIL 18



## SECTION VIII - INSTALLATION AND CONNECTIONS

Locate the Bandit in a position where there is sufficient air circulation at the rear. Leave at least 3" to the nearest equipment. If air cannot circulate freely, use an external fan to provide ventilation. In normal operation the Bandit will not heat up with prolonged periods of operation.

DO NOT PLACE BOOKS, PAPERS OR OTHER EQUIPMENT ON TOP OF THE BANDIT CASE.

The Bandit is for use with exciters having output impedance of 50 to 72 ohms and an output power of 100 watts. Exciters having higher power outputs may be used. However, you must reduce the gain or provide a pad between the exciter and the Bandit.

The antenna should have an impedance of 50 to 72 ohms. The internal Pi network will match higher impedances. However, the VSWR SHOULD NOT exceed 2:1, and the antenna should be capable of handling the 2000 watts PEP involved.

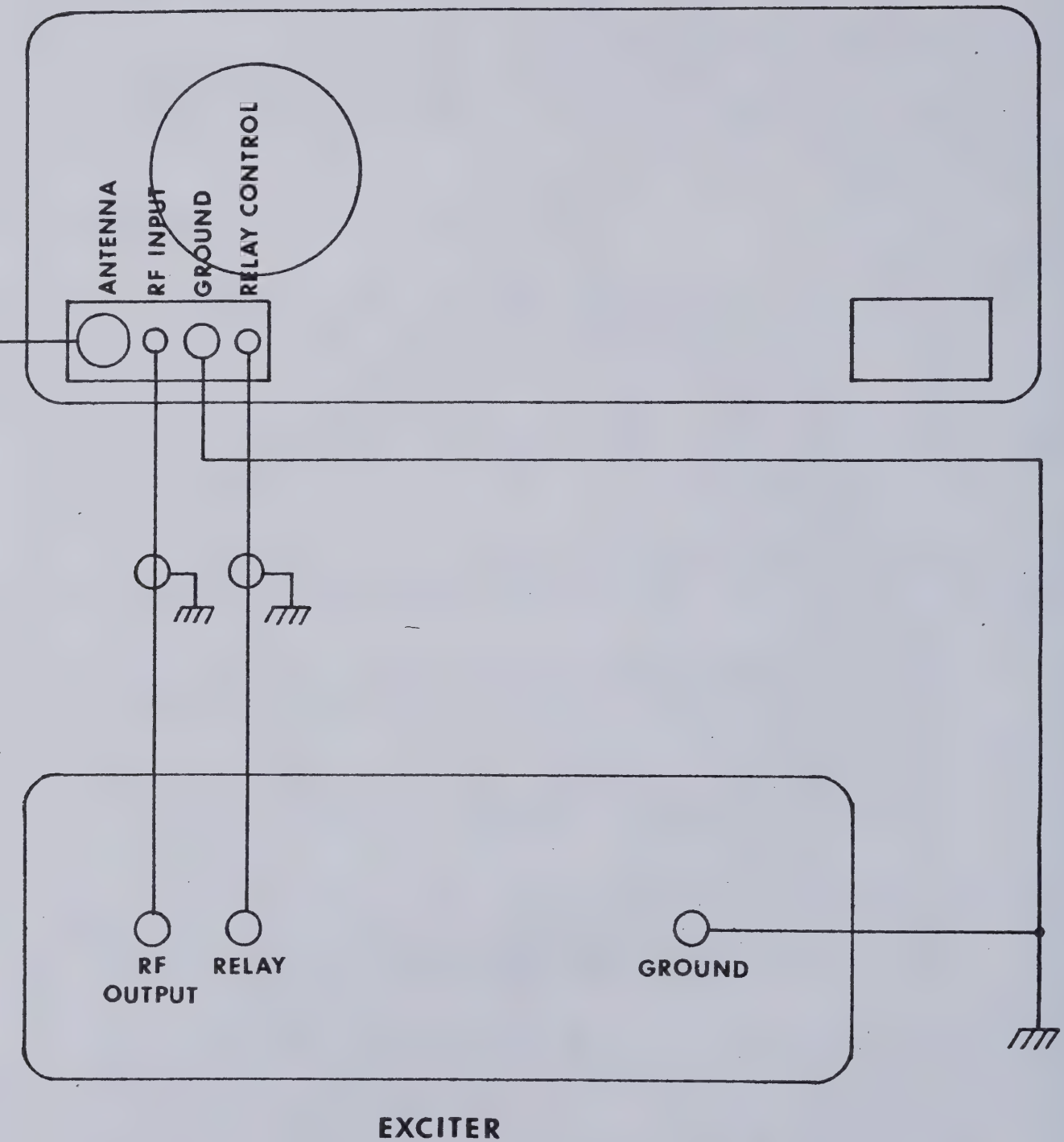
Detail 18 shows a typical connection made with a transceiver. Refer to your particular transceiver diagram and make connections to suit your circumstances. Use the interconnecting cables provided or RG-58A/U.

1. Connect the common ground between the exciter, the Bandit and the station ground. Use the GROUND binding post provided.
2. Connect one of the assembled coaxial cables from the Relay Control jack on the Bandit to your transceiver relay control output. The Bandit requires the usual contact closure to operate.
3. Connect the other coaxial cable from the RF Input jack on the Bandit to your transceiver's RF output jack. The cable provided is approximately 3 feet long. Cables of longer length can be used without affecting operation.
4. Connect your antenna to the Antenna jack. Operation of the transceiver will now be normal when the Bandit is off. Internal relay contacts route the antenna to the transceiver's receiving section when the Bandit is off. During periods when the Bandit is ON the internal relays route the RF drive to the tubes and the RF output to the antenna.

YOU ARE NOW READY TO TUNE THE BANDIT. OBSERVE ALL THE STEPS UNTIL YOU BECOME COMPLETELY FAMILIAR WITH THE OPERATION OF THE BANDIT.



# BANDIT 2000 C



## SECTION IX - TUNING PROCEDURE

The following procedure is general and should be used until you become completely familiar with the operation. Read the entire section through several times and pay particular attention to the general setting information and loading recommendations.

1. Set the band switch to the desired band.
2. Set the auxiliary antenna loading switch to the recommended position.

THE APPROXIMATE RECOMMENDED SETTINGS ARE:

Band	Antenna Loading
80 Meters	1 or 2
40 Meters	0
20 Meters	0
15 Meters	0
10 Meters	0

3. Set the antenna loading capacitor to the recommended value:

APPROXIMATE RECOMMENDED SETTINGS ARE:

Band	Antenna Tuning
80	10
40	10
20	0
15	5
10	5

4. Turn the wattmeter switch to 2000.
5. Set the plate meter switch to Ip.
6. Tune your exciter in the normal manner.





7. Reduce the exciter power to ZERO.
8. Turn the Bandit ON.
9. Increase the exciter output to obtain about 250 to 300 milliamperes of plate current on the meter.

DO NOT INCREASE TO MORE THAN  
400 MILLIAMPERES AT ANY TIME.  
FCC REGULATIONS LIMIT THE  
INPUT POWER TO 1000 WATTS.

10. Turn the TUNING CONTROL until a peak is observed in the wattmeter. This should correspond to a dip in the plate current.
11. Slowly rotate the LOAD CONTROL to obtain a maximum on the wattmeter.
12. Retune the tuning control to obtain a maximum.
13. The auxiliary antenna loading switch may be increased or decreased if necessary.

IF YOU TUNE THE BANDIT WITH FULL LEGAL POWER INPUT (400 MILLIAMPERES AT 2500 VOLTS) DO NOT OPERATE OVER 5 SECONDS DURING TUNE UP.

WHEN OPERATING ON 10, 15 OR 20 METERS, IT MAY BE NECESSARY TO RETUNE YOUR EXCITER WITH THE BANDIT ON. IN THIS CASE: LIMIT THE BANDIT IP TO 400 MILLIAMPS WHEN RETUNING.

#### SECTION X - NORMAL OPERATING CONDITIONS

The following operation indications have been found to be normal.

1. SSB: It is recommended that the plate current (IP) peak never exceed 415 milliamperes on voice peaks. Indications of 300 to 400 milliamperes give excellent results.
2. CW: It is important that the input power be limited to 1000 watts when running CW. This is most effectively done by reducing the excitation.

3. AM: The Bandit was intended for use in the SSB and CW mode. To operate in the AM mode the input power must be reduced considerably to prevent overheating. This is best done by limiting the plate current to 400 milliamperes max and reducing the excitation.
4. RTTY: Observe the same precautions as when operating in the CW or AM Mode.

#### SECTION XI - IN CASE OF DIFFICULTY

In case your Bandit does not function properly, we recommend the following steps be taken:

1. Recheck your wiring. Use the schematics provided and mark each wire with a colored pencil. Have a friend check it over for you. He may note an error that you have overlooked.
2. Check all solder joints.
3. Make sure that all filaments are good.
4. Check for debris that may have fallen into the chassis.
5. Check all auxiliary equipment for malfunction.
6. Compare your voltage readings with those on the schematic. A 20000 ohms/volt meter was used to take the readings. Voltages may vary  $\pm 10\%$ .

USE CAUTION WHEN MEASURING THE HIGH VOLTAGE. CONNECT YOUR METER WITH THE BANDIT OFF AND DO NOT HANDLE THE PROBE WHEN THE BANDIT IS ON.
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7. Specific troubles may be cured by referring to the table on page 47.
8. Certain units may show a tendency to create TVI, especially on the 10 and 15 meter bands. To eliminate this, connect a .01 micro-farad capacitor from terminal 1 of the voltage change-over board to ground. Connect another from terminal 4 of the voltage change-over board to ground.

## SECTION XII - SERVICE INSTRUCTIONS

If after a thorough check of all components and after applying your best efforts, your Bandit does not function properly, consult the Hunter Sales Company for advice.

Write, stating your name and the date your Bandit was purchased and the serial number. Give all the particulars of the problem, including voltage checks if possible. Include a rough diagram of your station and the exciter you are using. The technical staff will answer you very promptly.

If after all this fails, write the company for an authorization to return the Bandit. You must pay the shipping charges both ways. Pack the Bandit with at least 3" crushable material between the box and all sides of the Bandit. A carrier is not responsible for damage if in his opinion the unit was improperly packed.

In the event continued operational difficulties of the completed unit are experienced, the facilities of the Hunter Sales, Inc. Service Department are at your disposal. Your unit may be returned for inspection and repaired for a service charge of \$9.00 plus the price of any additional material that may be required. Units showing evidence of acid core solder or paste fluxes as well as units modified in design will not be accepted for repair and will be returned.

This Service Policy applies only to completed units constructed in accordance with instructions as stated in the manual.

TROUBLE	POSSIBLE CAUSES
1. Fuses blow	Wrong connection at terminal board. Shorted capacitor in power supply. Bad voltage doubler diode.
2. Pilot light does not light	Burned out bulb. Miswired.
3. Relays hum	Low line voltage. Bad relays.
4. No high voltage	Bad filter capacitor. Bad voltage doubler diode Open RF choke.
5. No output	No filament voltage. Bad antenna. Relay RY-1 contacts dirty.
6. Arcing of capacitor plates	VSWR too high. Improper loading. Dirty plates.
7. R-8 opens	Shorted capacitor in filter. Shorted tube.
8. Low output	Low line voltage. Low driving power. Low emission on tubes.
9. Unit overheats	Blower motor not wired right. No ventilation.
10. Meters read wrong direction	Meter leads reversed.
11. Bandit will not load	Bad antenna. Relay RY-1 dirty. Band switch dirty.
12. Wattmeter reads low	Reverse the red and brown leads of the toroid.



### SECTION XIII - REPLACEMENT PARTS

All components supplied with your Bandit have been selected and rated to meet the design objectives. Occasionally a component will be faulty and replacement will be necessary. In this case do the following:

1. Write Hunter Sales Company giving your name, the serial number of your Bandit and the date purchased, and the defect encountered.
2. Hunter Sales Company will replace the faulty component promptly.
3. Do not return the faulty component unless directed to do so.
4. This policy does not cover replacement parts that have been broken or damaged through carelessness on the part of the builder.

Please direct all inquiries to:

Hunter Sales, Inc.  
P.O. Box 1128  
Des Moines, Iowa 50311

#### SECTION XIV - WARRANTY

Hunter Sales Company warrants that all parts in the Hunter Model 2000C Bandit Kit are free of defects in material and workmanship under normal use and service for a period of 90 days from date of shipment. Hunter Sales Company will replace any part upon verification of the defective part.

The foregoing warranty shall apply to the original buyer only and is and shall be in lieu of other warranties, expressed or implied, and of all other obligations or liabilities on the part of Hunter Sales Company. In no event shall Hunter Sales Company be liable for any anticipated profits, consequential damages, loss of time, or other losses incurred by the buyer in connection with the purchase, assembly or operation of the Bandit Kit. No replacement of parts damaged by the buyer in the course of handling or assembly of the Bandit will be made.

This warranty is void if acid-core solders or fluxes have been used.

This warranty applies to Bandits purchased within the continental United States, APO and FPO addresses. Contact Hunter Sales Company for all other locations.

This warranty does not apply to electron tubes used in conjunction with but not furnished as a component of this kit.

## SECTION IX - TUNING PROCEDURE

following procedure is general and should be used until you be-  
e completely familiar with the operation. Read the entire sec-  
n through several times and pay particular attention to the  
eral setting information and loading recommendations.

1. Set the band switch to the desired band.
2. Set the auxiliary antenna loading switch to the recommended position.

THE APPROXIMATE RECOMMENDED SETTINGS ARE:

Band	Antenna Loading
80 Meters	1 or 2
40 Meters	0
20 Meters	0
15 Meters	0
10 Meters	0

3. Set the antenna loading capacitor to the recommended value:

APPROXIMATE RECOMMENDED SETTINGS ARE:

Band	Antenna Tuning
80	10
40	10
20	0
15	5
10	5

4. Turn the wattmeter switch to 2000.
5. Set the plate meter switch to Ip.
6. Tune your exciter in the normal manner.



## SECTION VIII - INSTALLATION AND CONNECTIONS

Locate the Bandit in a position where there is sufficient air circulation at the rear. Leave at least 3" to the nearest equipment. If air cannot circulate freely, use an external fan to provide ventilation. In normal operation the Bandit will not heat up with prolonged periods of operation.

DO NOT PLACE BOOKS, PAPERS OR OTHER EQUIPMENT ON TOP OF THE BANDIT CASE.

The Bandit is for use with exciters having output impedance of 50 to 72 ohms and an output power of 100 watts. Exciters having higher power outputs may be used. However, you must reduce the gain or provide a pad between the exciter and the Bandit.

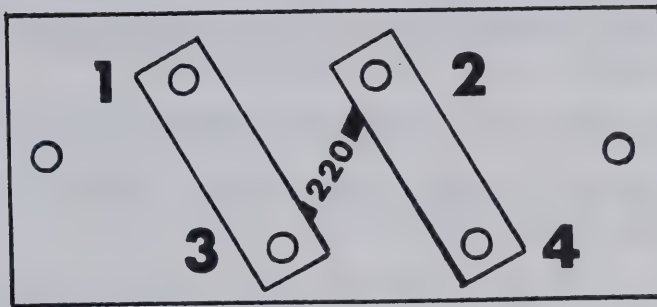
The antenna should have an impedance of 50 to 72 ohms. The internal Pi network will match higher impedances. However, the VSWR SHOULD NOT exceed 2:1, and the antenna should be capable of handling the 2000 watts PEP involved.

Detail 18 shows a typical connection made with a transceiver. Refer to your particular transceiver diagram and make connections to suit your circumstances. Use the interconnecting cables provided or RG-58A/U.

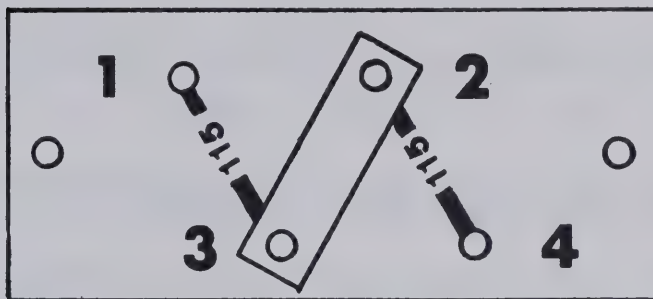
1. Connect the common ground between the exciter, the Bandit and the station ground. Use the GROUND binding post provided.
2. Connect one of the assembled coaxial cables from the Relay Control jack on the Bandit to your transceiver relay control output. The Bandit requires the usual contact closure to operate.
3. Connect the other coaxial cable from the RF Input jack on the Bandit to your transceiver's RF output jack. The cable provided is approximately 3 feet long. Cables of longer length can be used without affecting operation.
4. Connect your antenna to the Antenna jack. Operation of the transceiver will now be normal when the Bandit is off. Internal relay contacts route the antenna to the transceiver's receiving section when the Bandit is off. During periods when the Bandit is ON the internal relays route the RF drive to the tubes and the RF output to the antenna.

YOU ARE NOW READY TO TUNE THE BANDIT. OBSERVE ALL THE STEPS UNTIL YOU BECOME COMPLETELY FAMILIAR WITH THE OPERATION OF THE BANDIT.





110 VOLT OPERATION



220 VOLT OPERATION

#### DETAIL 15

Install the line cap on the line cord. The green wire always goes to ground. Connect the voltage changeover links for your voltage as shown in Detail 15. Fasten with the acorn nuts, Part No. 30 on the Parts Pictorial.

If you wish to operate your Bandit on 220 volts AC it will be necessary for you to procure a matching plug for your 220 volt receptacle.

Refer to Detail 16 and make up two interconnecting cables from RG-58A/U and the four phono plugs provided.

THIS COMPLETES THE ASSEMBLY OF YOUR BANDIT.  
WE ARE NOW READY FOR THE TESTING PHASE.

- \_\_\_ Remove the 1/4"-20 nuts mounted on the transformer.
- \_\_\_ Place the transformer on your work surface with the studs up.
- \_\_\_ Guide the chassis onto the transformer.
- \_\_\_ Route the yellow wires through grommet hole G-3.
- \_\_\_ Route the red and yellow, red, brown, white and green wires through grommet hole G-5.
- \_\_\_ Route the blue, black and the two violet wires through grommet hole G-4. Fasten transformer with 1/4"-20 nuts and washers.
- \_\_\_ Connect the red and yellow wire to terminal 2 on the power diode. Solder.
- \_\_\_ Connect one purple wire to TP1-2. No solder.
- \_\_\_ Connect the other purple wire to TP1-1. No solder.
- \_\_\_ Connect the black wire to the #10 lug mounted at terminal 3 of the voltage changeover board. Solder.
- \_\_\_ Connect the brown wire to a #10 lug mounted at terminal 1 of the voltage changeover board.
- \_\_\_ Connect the white wire to a #10 lug mounted at terminal 2 of the voltage changeover board. Solder.
- \_\_\_ Connect the blue wire to a #10 lug mounted at terminal 4 of the voltage changeover board. Solder.
- \_\_\_ Route the green wire coming from the grommet hole G-5 to terminal 2 of Relay 2. Solder 2.
- \_\_\_ Connect the yellow wire from grommet hole G-3 to the solder lug mounted at terminal 1 of the bifilar choke. Solder.
- \_\_\_ Connect the other yellow wire to the solder lug mounted at terminal 2 of the bifilar choke.
- \_\_\_ Connect the red wire coming from grommet hole G-5 to the solder post. Solder 2.
- \_\_\_ Connect one end of the .001 1 KV ceramic disc capacitor to TP1-1. Solder 2. Connect the other end to TP1-2. Solder 4.

Twist the brown and black hookup wire together throughout its full length. Connect the brown hookup wire to terminal 1 of the fan. Solder. Connect the black hookup wire to terminal 2 of the fan. Solder.

Mount the fan and fan mounting bracket on the main chassis as shown in Pictorial 14. Route the brown and black twisted pair through the chassis at hole F-4. Secure the fan mounting bracket to the bottom of the chassis with 6-32 x 1/4" screws. Use lockwashers beneath the head of the screws. Secure the bracket to the chassis side with 6-32 x 3/8" screws. Fasten with 6-32 x 1/4" nuts. Use lockwashers beneath the nuts. Position the brown and black twisted pair so that the wire does not interfere with the rotation of the fan.

Mount the two suppressor networks, RFC-1 and RFC-2 to the stud mounted on top of the Antran choke. Orient the suppressors as shown in Pictorial 14. Fasten with a 6-32 x 5/16" nut.

#### REFER TO PICTORIAL 15 FOR THE FOLLOWING STEPS

Position the chassis as shown in Pictorial 15.

Locate the brown and black twisted pair coming from the fan. Connect the brown wire to a #6 lug mounted at terminal 2 of the voltage changeover board. Solder. Connect the black wire to a #6 lug mounted at terminal 1 of the voltage changeover board. Solder. Route the cable as shown in Pictorial 14.

Locate the power transformer and trim the leads as follows:

- ( ) White - 9 1/2".
- ( ) Blue - 9".
- ( ) Violet - 9".
- ( ) Violet - 9".
- ( ) Black - 11".
- ( ) Brown - 8 1/2".
- ( ) Red - 13".
- ( ) Red and Yellow - 12 1/2".
- ( ) Green - 10".
- ( ) Yellow - 11 1/2".
- ( ) Yellow - 8".

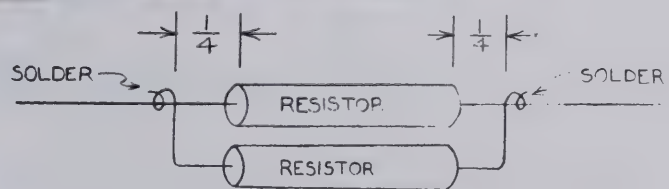
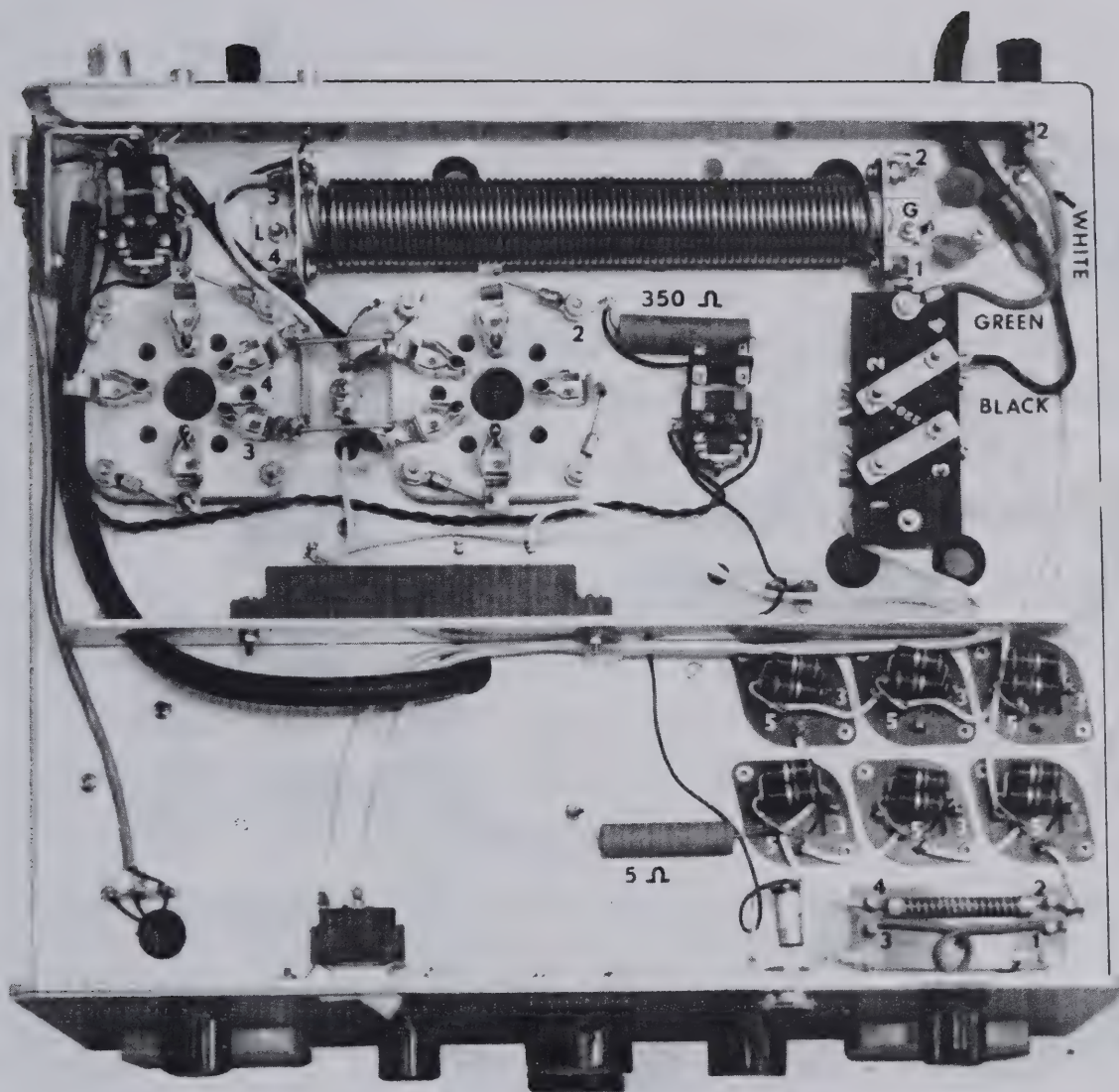
- ( ) Strip back the outer jacket 4".
- ( ) Trim the white lead to a length of 2 3/4".
- ( ) Trim the green lead to a length of 3".
- ( ) Strip back all leads 1/4" and tin.
- \_\_\_ Solder a No. 6 barrel lug on the green lead.
- \_\_\_ Thread the line cord through the grommet installed at hole B on the rear chassis support bar. Slide a 3/8" cable clamp over the line cord on the chassis side. Fasten at hole F on the main chassis, using a 6-32 x 3/8" screw. Use a No. 6 flat washer between the cable clamp and a 6-32 x 5/16" nut.
- \_\_\_ Route the black wire to terminal 4 of the changeover board. Solder to a No. 10 lug mounted there. Connect the white wire to terminal 2 of the fuse holder. Solder.
- \_\_\_ Ground the green wire at the stud holding the changeover board to the chassis. Use a 6-32 x 5/16 nut and lockwasher.

REFER TO PICTORIAL 14 FOR THE FOLLOWING STEPS

- \_\_\_ Orient the chassis as shown in Pictorial 14.
- \_\_\_ Connect the center conductor of the RG-213/U to terminal C-1 of the loading capacitor, E. F. Johnson type 154-40. Secure with a 6-32 x 5/16" nut.
- \_\_\_ Connect the braid to hole U on the main chassis. Use a 6-32 x 1/4" screw. Use a lockwasher beneath the head of the screw.
- \_\_\_ Locate the red high voltage wire coming from grommet hole R. Connect to the lower terminal of the Antran choke and to the No. 6 solder lug mounted on top of the 1000 micro-micro-farad capacitor. Solder both connections.
- \_\_\_ Refer to Detail 14 and mount the fan in the fan shroud.
- \_\_\_ Mount four 1/4" grommets in holes A, B, C and D on the fan mounting bracket. Mount the Rotron fan on the grommets as illustrated in Detail 14. Fasten with 4-40 x 1/2" screws. Use 4-40 x 1/4" nuts and lockwashers.
- \_\_\_ Cut a piece of No. 20 brown and black hookup wire to a length of 19". Strip back both ends 1/4" and tin.

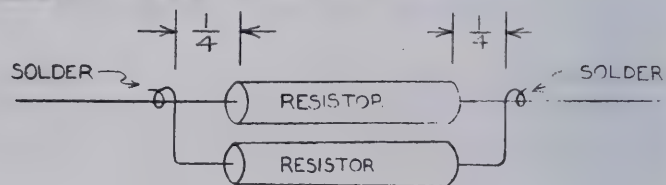
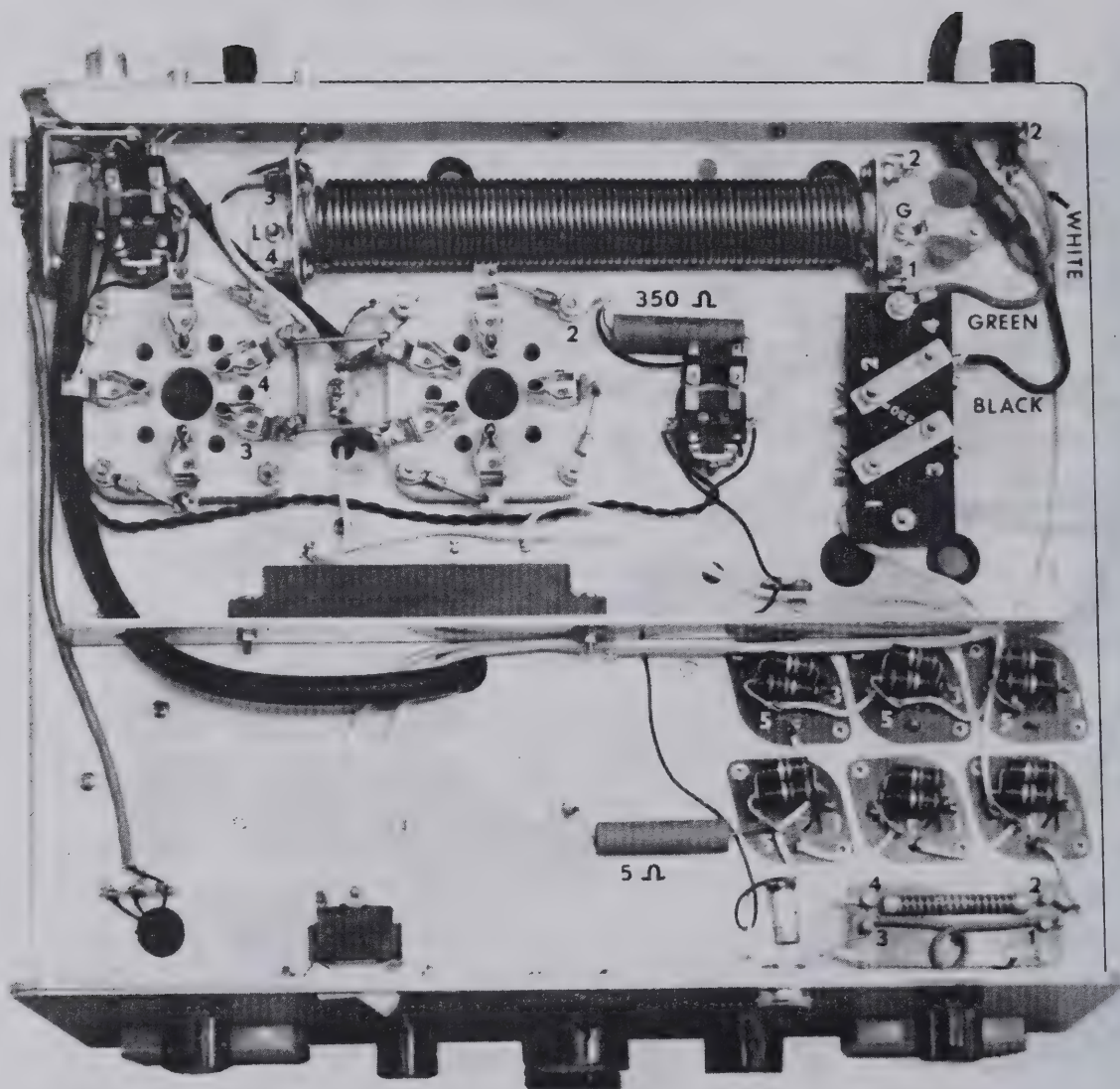


## PICTORIAL 13



DETAIL 12

## PICTORIAL 13



DETAIL 12

Connect one end of the 12 1/2" piece of high voltage wire to terminal 5 of capacitor C-2. No solder. Connect the other end to terminal 1 of the power diode. No solder.

Using the 4" piece of high voltage wire connect the 1/4" end to terminal 1 of the power diode. Solder 2. Insert the end that is tinned 1" long through the grommet located at hole R on the main chassis.

Refer to Detail 11 and prepare the RG-213/U cable in the following manner:

- ( ) Trim the cable to a length of 14 3/4".
- ( ) Strip back the outer insulation on one end to a length of 1".
- ( ) Carefully remove the shield for the entire 1" length.
- ( ) Strip back the center conductor a length of 1/2".
- ( ) Tin the entire length of center conductor.
- ( ) Bend the center conductor back 1/4" from the end.

Prepare the other end in the following manner:

- ( ) Strip back the outer insulation outer jacket a length of 2".
- ( ) Carefully fan out the braid and twist into a pigtail.
- ( ) Solder a No. 6 barrel lug on the end of the pigtail.
- ( ) Trim back the center insulation 1/4" and tin.
- ( ) Solder a No. 6 barrel lug to the center conductor.

Insert the end with the solder lugs attached through hole AA in the main chassis. Route the cable through hole BB in the reinforcing bar to Relay 1 as shown in Pictorial 12.

Solder the center conductor to terminal 5 of Relay 1. See Inset on Pictorial 12. Be careful not to use too much heat as the center conductor insulation will melt.

#### REFER TO PICTORIAL 13 FOR THE FOLLOWING STEPS

Locate the following components:

- ( ) The 0.1 ohm shunt, Part No. 27 on the Parts Pictorial.
- ( ) The 1.5 meg ohm high voltage metering resistor.



- Mount a 140 microfarad 475 volt DC capacitor at holes C-2, C-3, C-4, C-5, C-6 and C-7. Orient the center tab as shown in Pictorial 12. Give each of the mounting tabs a 1/4 turn twist to lock the capacitor securely in place.
- Locate the red high voltage wire. Cut 10 pieces to the following lengths:
  - ( ) 5 pieces 2 1/4" long.
  - ( ) 1 piece 2 1/2" long.
  - ( ) 1 piece 2 3/4" long.
  - ( ) 1 piece 4" long.
  - ( ) 1 piece 11" long.
  - ( ) 1 piece 12 1/2" long.
- Strip back all ends 1/4" and tin. Strip back one end of the 4" piece 1" and tin.
- Using a 2 1/4" piece connect one end to terminal 1 of capacitor C-2. Solder. Connect the other end to terminal 5 of capacitor C-3. No solder.
- Using another piece of the 2 1/4" length of red high voltage wire connect one end to terminal 1 of capacitor C-3. Solder. Connect the other end to terminal 5 of capacitor C-4. No solder.
- Using a third piece of 2 1/4" red high voltage wire connect one end to terminal 2 of capacitor C-4. Solder. Connect the other end to terminal 5 of capacitor C-5. No solder.
- Using the fourth piece of 2 1/4" red high voltage wire connect one end to terminal 2 of capacitor C-5. Solder. Connect the other end to terminal 5 of capacitor C-6. No solder.
- Connect the remaining 2 1/4" piece of red high voltage wire to terminal 2 of capacitor C-6. Solder. Connect the other end to terminal 5 of capacitor C-7. No solder.
- Connect one end of the 2 1/2" piece to terminal 5 of capacitor C-5. No solder. Connect the other end to terminal 4 of the high voltage terminal board. No solder.
- Connect one end of the 2 3/4" piece of high voltage wire to terminal 2 of capacitor C-7. Solder. Connect the other end to terminal 1 of the high voltage board. Solder 2.
- Connect one end of the 11" piece of high voltage wire to terminal 1 of capacitor C-7. Solder. Connect the other end to terminal 3 of the power diode. Solder.





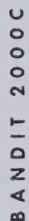
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LETHAL VOLTAGES ARE PRESENT IN THIS  
UNIT. BEFORE ATTEMPTING SERVICE OF  
THIS UNIT, MAKE SURE THE POWER IS  
DISCONNECTED AND THE POWER SUPPLY IS  
SHORTED OUT.

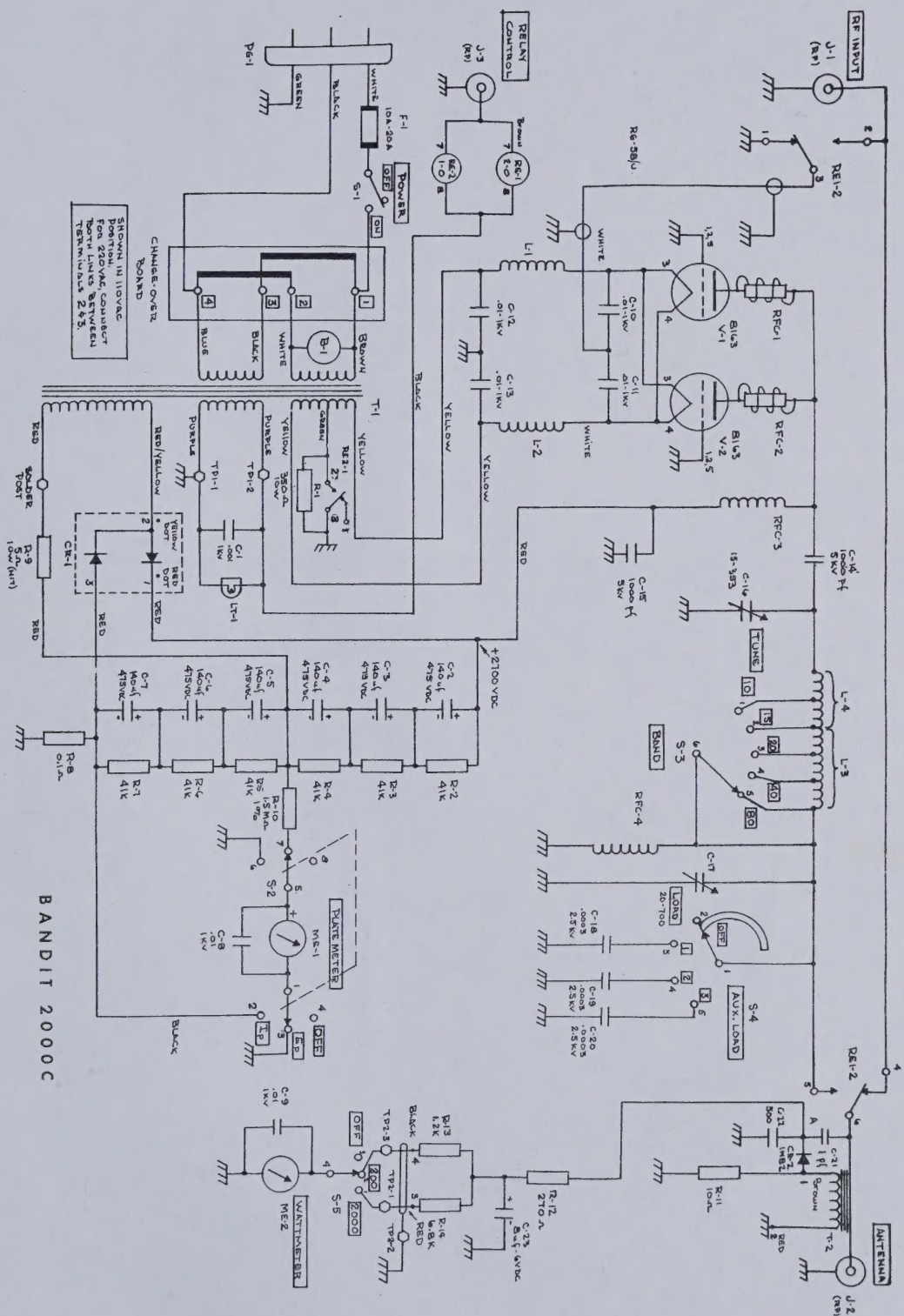
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